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An analysis of the effects of Aviation Career Continuation Pay (ACCP) using an Annualized Cost of Leaving (ACOL) approach

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THESIS

AN ANALYSIS OF THE EFFECTS OF AVIATION CAREER CONTINUATION PAY (ACCP) USING AN ANNUALIZED COST OF LEAVING (ACOL) APPROACH

by

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September 1999

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The U.S. Navy offers financial inducements to its pool of aviators as a retention tool. Navy officials are currently considering replacing the current system of bonus payments, known as Aviation Continuation Pay (ACP), with a revised system known as Aviation Career Continuation Pay (ACCP). ACCP ties annual lump sum payments to accession to seagoing career milestone billets, whereas ACP provides payment only for remaining on active duty. This thesis analyzes retention statistics from the Navy Officer Master File and other data sources to develop an Annualized Cost of Leaving (ACOL) model. The model parameter that designates a monetary equivalent for a predilection to remain in the service was extrapolated into elements of the ACCP program using career progression statistics to project the effect of switching to ACCP on retention. This extrapolation yielded an estimation of a 19.68 percent increase in the likelihood of retention through year of service (YOS) 11 to YOS 20, 29.72 percent from YOS 16 to 20, 13.9 percent from YOS 16 to 25, and 8.86 percent from YOS 21 to 25.

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ABSTRACT

The U.S. Navy offers financial inducements to its pool of aviators as a retention tool. Navy officials are currently considering replacing the current system of bonus payments, known as Aviation Continuation Pay (ACP), with a revised system known as Aviation Career Continuation Pay (ACCP). ACCP ties annual lump sum payments to accession to seagoing career milestone billets, whereas ACP provides payment only for remaining on active duty. This thesis analyzes retention statistics from the Navy Officer Master File and other data sources to develop an Annualized Cost of Leaving (ACOL) model. The model parameter that designates a monetary equivalent for a predilection to remain in the service was extrapolated into elements of the ACCP program using career progression statistics to project the effect of switching to ACCP on retention. This extrapolation yielded an estimation of a 19.68 percent increase in the likelihood of retention through year of service (YOS) 11 to YOS 20, 29.72 percent from YOS 16 to 20, 13.9 percent from YOS 16 to 25, and 8.86 percent from YOS 21 to 25.

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EXECUTIVE SUMMARY

Naval Aviation must compete with the civilian job market to retain its aviators during the critical mid-career years after an aviator has completed his or her minimum service requirement incurred after flight school. Throughout the history of military aviation, military planners have had to provide aviators with enticements so that they would remain on active duty. Civilian airlines and other employers counter these enticements with larger salaries, a reduced workload, and the utility to allow aviators to make their homes anywhere in the United States. The Navy has attempted to use financial inducements to counteract these factors and retain aviators at sufficient levels with varying success rates. Aviators cite job satisfaction as well as potential salary as reasons for resigning and entering the civilian job market. Current financial inducement programs do not address this two-fold challenge to aviator retention.

Efforts to counterbalance the causes of aviation officer retention shortfalls have included the current Aviation Continuation Program (ACP) program. When coupled with the separate financial program referred to as Aviation Career Incentive Pay, commonly known as flight pay, ACP provides a financial package that reduces the disparity between civilian and military salaries and provides an inducement to retention. However, ACP is given in direct exchange for a contract for additional years of service. An aviator can accept ACP without accepting career milestone billets, a combination which does not ensure his or her long-term value to the Navy. ACP bonus awards also vary across sub-communities, creating a caste system of bonus recipients and non-recipients that

undermines morale and perhaps harms retention. Finally, ACP can create a pay 'bubble' where an aviator who is in the target retention years may be earning more than his superiors. These shortcomings may also undermine ACP effectiveness. By February of 1999 the Navy suffered a shortage of 1,153 pilots, an approximate 15 percent shortfall.

The Navy is currently considering a revised aviation bonus system to replace ACP called Aviation Career Continuation Pay (ACCP). The eligibility for the bonus awards under this system would correspond both to a contract for additional years of service and to the selection and accession to specific milestone billets found throughout the aviation career path. Some of these career milestone billets are beyond the current target retention years of ACP. The total bonus profile is an enticement toward continual career advancement, offering financial incentives to challenging billets that may contribute to job dissatisfaction. The extension of the target years alleviates the pay 'bubble.'

The ACCP program was developed under the assumption that job satisfaction and career orientation of aviators affect retention. Evaluation of ACCP requires a technique that considers not only the financial advantage of leaving the service, but also the non-monetary value an individual associates with staying in. The Annualized Cost of Leaving (ACOL) technique developed by Warner (1981) forms a dollar equivalent "taste" for the service factor known as the cost of leaving (COL). The COL value can be compared to likely ACCP payments to form estimates of the bonus program's likely effectiveness.

"Significant career decision points" were used for the analysis. The 9th, 11th, 16th, and 21st years of service were selected because they approximated the career progression points required for eligibility to the ACCP milestone billets. At each of these points, a Bernoulli ("two-valued") stay-or-leave indicator was formed to reflect an aviator's retention decision up to and including that point. Two COL values were found for each point: the first assumed that an aviator considered a 20-year retirement, the second, a 25-year retirement. A logit regression model was developed for each of the significant career decision points, measuring the probability of staying in the service as a function of the COL value, as well as marital and dependent status. Separate models were developed for 20 and 25-year retirements.

The resultant coefficient of the COL term in each model was used to derive the effect of a change in the COL value on the likelihood of retention at the significant career decision point. If an ACCP bonus award was applied to that aviator, the COL value would be increased, with a corresponding percentage change in the likelihood of retention. The ACCP bonus award profile an aviator would perceive he or she is likely to receive throughout his or her career was estimated. Each annual award was discounted backward to the significant career decision point using a personal discount rate of 10 percent. The resultant perceived bonus award for an aviator was compared to the estimated effect of the cost of leaving on retention, and estimated increases in the likelihood of retention were determined.

Where the COL amount proved to be a statistically significant factor in the retention decision, this yielded an estimate of a 19.68 percent increase in the likelihood of retention through 11 to 20 years of service, 29.72 percent from 16 to 20 years of service, 13.9 percent from 16 to 25 years of service, and 8.86 percent from 21 to 25 years of service.

I. INTRODUCTION

A. PROBLEM DESCRIPTION

In recent years, the United States Naval Aviation community has experienced a exodus of pilots leaving the service and opting to work for civilian airlines. Throughout the history of military aviation, military planners have had to provide aviators with enticements so that they would remain on active duty. The civilian airlines counter these enticements with larger salaries, a reduced workload, and the utility to allow aviators to make their homes anywhere in the United States. Since the Vietnam era, civilian airlines have hired military aviators on approximately a seven-year cycle. This hiring cycle fluctuates depending upon the state of the economy and the age of the pilot population–commercial pilots must retire at 60 years of age. In addition to the uncompetitive financial situation, military careers present management workloads and competitive challenges to achieving career advancement that may make an officer find a civilian career preferable.

The Navy has attempted to use financial inducements to counteract these factors and retain aviators at sufficient levels, with varying success rates. The latest proposed program of financial incentives is the Aviation Career Continuation Pay (ACCP) program. An evaluation of this proposal can be performed based on data from the past success of financial inducements for retention. This evaluation requires a technique that considers both the direct financial advantage, and a monetary-equivalent measure of an individual aviator's predilection to leave the service. The Annualized Cost of Leaving

(ACOL) technique developed by Warner (1981) forms a dollar-equivalent "taste" for the service factor known as the cost of leaving (COL). The COL value can be compared to potential ACCP payments to form estimates of effectiveness.

The ACCP program was developed under assumptions of perceived job satisfaction and career orientation of aviators. These factors can be lumped into the COL "taste" factor. Although these factors are only perceptual, ACCP is designed to address them directly. Therefore ACCP should have a positively correlated relationship between the inception of ACCP bonus payments and retention. The results of this thesis support this contention.

B. BACKGROUND

The Navy has offered inducements to remain on active duty to alleviate the retention shortfalls, including an annual bonus for officers who contract to remain beyond their minimum service requirement (MSR). These programs have failed to adequately alleviate these shortfalls (Moore, 1997).

Past efforts to counterbalance the causes of aviation officer retention shortfalls have included the current Aviation Continuation Program (ACP) program. When coupled with the separate financial program referred to as Aviation Career Incentive Pay (ACIP), ACP serves the dual purpose of providing an immediate financial inducement for accession to service beyond initial obligations and reducing the disparity between income levels of civilian and military pilots. ACIP, commonly known as flight pay, is provided as a supplement to military pay for Naval Aviation officers who have achieved accumulated career flight hour "gates" for certain years of service. ACP, however, is given in direct exchange for a contract for additional years of service.

Beginning in January 1989, the ACP program replaced the Aviation Officer Continuation Pay (AOCP) program as the Navy's major incentive for retaining mid-grade aviators (Cymrot, April 1989). The ACP program differed from the AOCP program in several ways. The maximum bonus payable was raised from $6,000 annually to a legal maximum of $12,000, and eventually to $25,000 (Cymrot, April 1989; Moore, 1997). Additionally, under AOCP the Navy had little flexibility in setting bonus levels for a sub-community. Under ACP, the Navy can vary the amount of the bonus depending on the size of the shortage in a sub-community. Finally, the aviator could choose among AOCP contract lengths of three, four, or six years, but a regular ACP contract must extend until the completion of YOS 14. However, a short-term bonus option has sometimes been offered with a duration of either one or two years, largely to address the problem of shortages of instructors in the training commands (Cymrot, April 1989).

The goal of ACP is to encourage retention beyond the eleventh year of service (YOS 11) providing a pool of officers for squadron department head and officer-in-charge (OIC) tours into YOS 14. The bonus is awarded to all eligible officers in designated sub-communities who have completed their MSR and are in the targeted YOSs, regardless of current or future billet assignment. Eligibility for a bonus award and the amount of the award is determined by current or projected shortages for department heads in each Naval Aviation sub-community based on future force structure needs (Cymrot, 1989; McKenzie, 1999).

ACP bonus amounts were established to alleviate these shortages. The bonus amount necessary to raise retention in a specific sub-community by one percentage point was estimated by using available econometric data. This amount is often different in each sub-community. The total bonus offered to aviators of a sub-community is then proportional to the shortfall. The determination of the bonus amount required per retention point is a major source of uncertainty in this methodology, since it involves the forecast of future economic conditions. The literature does not adequately explain the actual econometric determination method for this value.

The ACP program has as a shortcoming that Naval Aviation retention requirements are not being met. In 1998, the Navy suffered a shortage of 1,153 pilots, about a 15 percent shortfall. Aviators have expressed their frustration with the current bonuses and stated that they are not working very effectively. Some aviators have complained about the perceived "cut in pay" that occurs when a pilot reaches YOS 14 and is no longer eligible to receive bonus money (Gebicke, 1999). Aviation leadership has also been also concerned about post-command commander resignations. Aviators earn ACIP at this point in their career, but these aviators are beyond the ACP award years. Another concern about ACP is that it is paid to officers who never fill a department head billet. Between 10 and 30 percent of ACP recipients attrite before that point. There are some concerns that the inequality in the differing amounts paid over various sub-communities creates a caste system of bonus recipients and non-recipients that undermines morale and perhaps harms retention (Moore, 1999).

ACP does not support a pyramidal pay structure. Total annual pay amount does not increase commensurate with the increase in authority and responsibility. The ACP bonus is awarded only for acceding to service beyond MSR, and is limited to the 14th YOS (Cymrot, 1989). Figure 1 shows how this bonus structure actually imparts a decrease in pay level at YOS 14 (typically age 36-37) as eligibility for higher milestone billets increases.

20 Year Military Career then Airline Career to Age 60

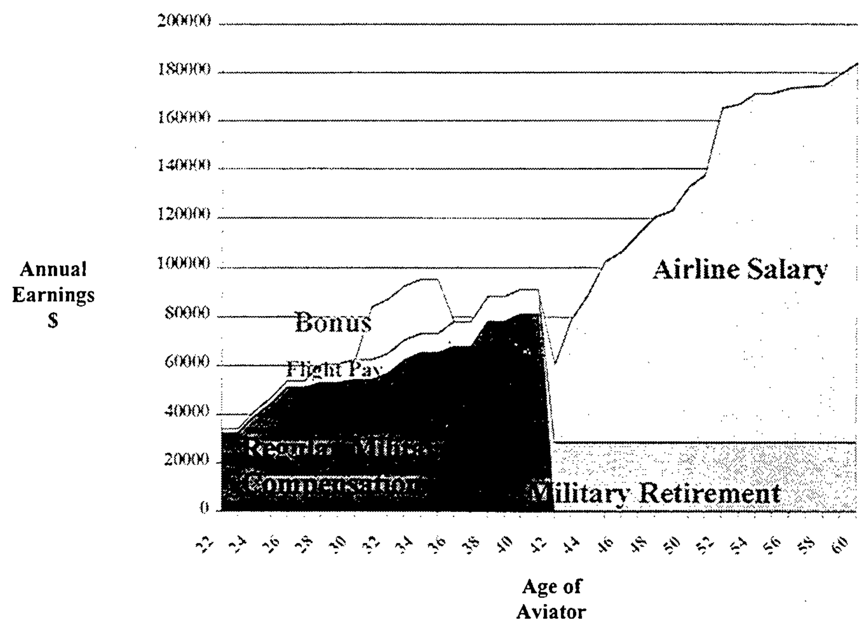

Figure 1. Illustration of the Drop in Pay as an Aviator Passes ACP Bonus Eligible Years

The Navy is currently considering a revised aviation bonus system called Aviation Career Continuation Pay (ACCP) to replace ACP. The eligibility for bonus awards under this system would correspond not only to the end of MSR, but also to the selection and accession to specific career milestone billets found throughout the aviation career path.

Some milestones targeted are beyond the 14 years of service that is the legal seniority limit of ACP. Thus, new legislation will be required to implement ACCP. Unlike ACP, the bonus amounts are equal across sub-communities (Moore, 1999).

The proposed revisions in ACCP attempt to provide incentives to accede to the unique and demanding career challenges of military aviation that may not be required in a civilian aviation or other career. The tie to billet position is a marked shift that distinguishes ACCP from its predecessor ACP program. The primary goal of ACCP, like ACP, is the augmentation of service continuation rates for aviators at approximately YOS 7 to meet the need to fill future mid-grade officer requirements in squadron department head billets through YOS 14. Beyond YOS 14, ACCP attempts to ensure the required continuation rate by continuing compensation for jobs with additional challenges above the civilian sector. This approach eliminates the disparity between the increase in authority and responsibility beyond YOS 14 and the decrease in pay at that time. This will give inducement for retention both to post-command commanders and to those aviators who were dissuaded by the perceived "pay cut." The billet tie should "weed out" those who likely would not fulfill a seagoing milestone billet, possibly increasing the cost effectiveness of the bonus program. Figure 2 illustrates the resultant pay profile.

ACP and other past programs operated under a philosophy of "the job is its own reward" (Goodly, 1999). This perception of job reward may be proving inadequate to address the retention needs of Naval Aviation. ACCP is an attempt to address the shortfall. ACCP is meant not only to serve as a retention bonus but also to provide greater equality across sub-communities, to create stability in bonus amounts, and to target high-quality aviators. The interest of Navy leadership in ACCP lies partially in the view that such a program will benefit both morale and retention (Moore, 1999).

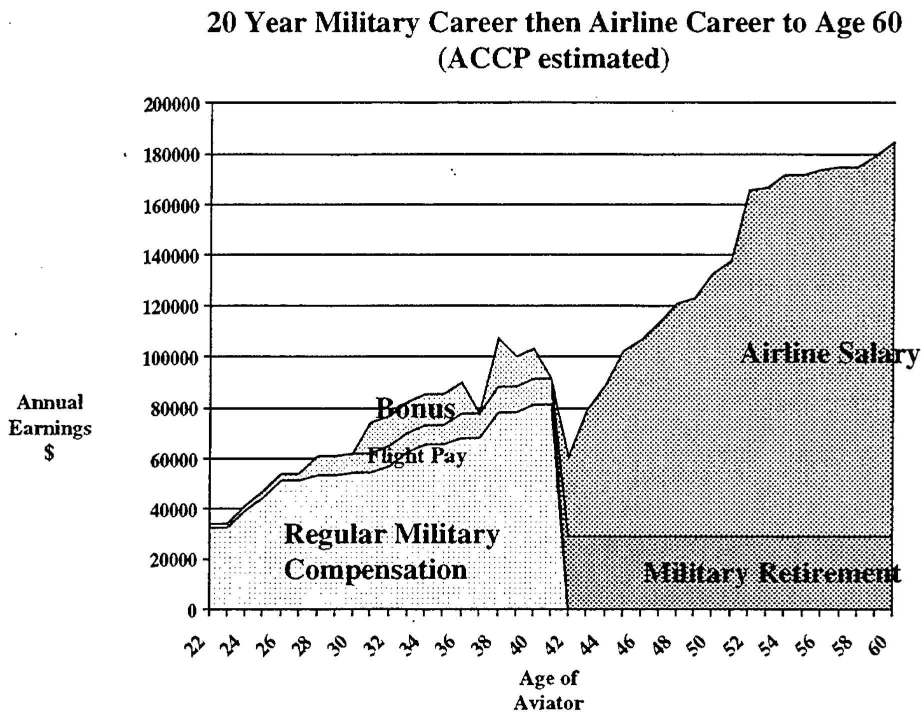

Figure 2. Illustration of Continued Pay Increases as an Aviator Reaches Command-Eligible Years of Service Beyond Mid-grade Years

C. SUMMARY OF PROBLEM

This thesis has analyzed the administration of ACCP and its various distribution packages with aviation sub-communities and the effect on aviation continuation rates in an Annualized Cost of Leaving (ACOL) model. Data was derived from actual continuation statistics under ACP.

Information on a decision to accept a bonus and its pursuant service obligation, the bonus award amount to which a service member has acceded, years of service for bonus obligation and separation from active duty are available from the Defense

Manpower Data Center (DMDC), Naval Military Personnel Command (NMPC) Officer Master File (OMF) and the Office of the Chief of Naval Operations Assessments Division (N8). The OMF also includes dependency data, initial entry information, personal demographic information, promotion information, separation code, and specialty skill codes (Poindexter, 1998). Data from N8 provides resignations and bonus contract specifics.

The information was analyzed using logistic regression in an ACOL model to find predictors of officer retention. The results were used to predict the effectiveness of ACCP on increasing retention.

1. Research Goals

The goals of the research are to:

- Develop an Annualized Cost of Leaving (ACOL) model for aviators eligible for bonus payments under the ACP program. Determine from the models the Annualized Cost of Leaving factor that designates the monetary equivalent preference for remaining in the military.
- Develop a logit retention model from the critical monetary equivalent ACOL factor and dependent data to predict the efficacy of ACCP.

2. Limitations

Only data records with fields designating eligibility and accession to a Naval Aviation officer retention bonus program were considered. This does not include special pay and compensation for duty that are not tied directly to retention or billet accession such as sea pay or command pay. The limits to this scope will be past application of the ACP program, and its accompanying package of financial compensation for Navy aviators, which includes ACIP. Recipients of AOCP were not considered in any calculations, unless those calculations exclusively involved years of service beyond the final ACP/AOCP year. At this point AOCP would not be reflected in future cost of leaving calculations.

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II. LITERATURE REVIEW

A. RETENTION AND CAREER DISSATISFACTION

The ACOL model accounts for both the financial aspect of an individual's retention decision and a "taste" for service factor. If the financial benefits of remaining in the service are greater over an aviator's lifetime then resignation and civilian employment, then the difference can be considered the monetary equivalent of the value of his forgone military career upon his or her resignation. The ACOL model therefore addresses career and job satisfaction with a monetary-equivalent measure that can be compared against ACCP bonus awards.

Under the current ACP program, the inherent increases in job challenge with advancement coupled with less pay intuitively affect job satisfaction. Arnold and Feldman (1982) found overall job satisfaction to be one of several strong factors with significant relationships to job turnover. As aviators move up the career ladder, we expect this reduced job satisfaction to lead to higher turnover. This decrease in the appeal of jobs resulting from advancement should be reflected in the ACOL value for that career milestone point. ACCP should, at least partially, address this decrease of appeal and increase the ACOL value, increasing retention proportionally.

Derr (1980) explored several factors of junior officer retention during the budgetary downturn of the 1970s. Job satisfaction in the form of the esteem of further career advancement was significant among these factors. A commanding officer billet is the culmination of a successful 20-year career. A loss of esteem of the CO's role was significantly noted in Derr's study. As one junior officer was quoted:

> Congress, and even more so, the executive branch, are prime culprits in generating the retention crisis. While the CNO stresses the importance of command (CO) involvement and places the major responsibility at that level, the onus is on him to start pushing up the chain of command, not down. Continual attacks on the stature of our military establishment greatly defray overall job satisfaction.

Since the career pipeline of an officer is structured so that milestones will increase the chances of screening for command, then the milestone billets lose their appeal if the prospect of eventual command no longer inspires an officer to seek them. The respective ACOL values for these career milestone points are likely to decrease.

Derr (1980) attempted to classify facets of Navy officer job satisfaction by surveying and interviewing a sample of 154 officers and categorizing the results. He used the "career anchor" concept to refer to elements of job satisfaction among officers. These "career anchors," developed by Edgar Schein of the Massachusetts Institute of Technology, are areas of priority in an individual's awareness of job satisfaction. The five major areas of awareness are managerial competence (desired level of authority), technical/functional, security, autonomy, and creativity. He found that aviators possessed a very strong preference for the technical/functional anchor. Those with technical/functional anchors will likely become highly dissatisfied with career development policies geared to managerial personnel, i.e. command preparation. Furthermore, he found security to have a generally high value for many Naval officers, and proposed strengthening the Navy officer job security and benefit package to enhance job satisfaction. Increased compensation for career milestone billets addresses the security anchor and compensates for the emphasis on the managerial anchor. Both facets of the ACOL value are addressed: the direct financial inducement and the monetary-equivalent measure of career value.

Marsh (1989) conducted a survey of officers and enlisted personnel. Among both groups an analysis revealed that the most important causes of retention intentions are months of active duty, the highest paygrade one expects to reach before leaving the Navy, and satisfaction with the military as a way of life. Among Navy officers, however, an additional factor is that the higher the present paygrade, the lower their satisfaction with military life and the shorter their expected future years of service. This is again an example of career progression coinciding with increasing dissatisfaction at a time when, under the ACP program, the officer may suffer a decrease in pay.

Other reports are inconsistent in their findings on retention shortfall causes related to job and career satisfaction. In an extensive literature review of Navy officer retention material, Wilcove, Burch, Conroy, and Bruce (1991) found several indications that Naval aviator job dissatisfaction grows with an increase in seniority. Significant increases in seniority correspond with increases in job responsibility during the mid-career (YOS 11–14) target retention years of ACP. They found that the most consistent relationship emerging from both the civilian and military literature was that the probability of turnover is inversely associated with job challenge. This at first appears to run counter to the claim that an increase in responsibility has a negative relationship with intent to remain beyond MSR. However, Wilcove *et al.* define job challenge as autonomy and responsibility, possibly making it more like Derr's technical/functional than the managerial anchor.

Wilcove *et al.* also found that the military-civilian pay differential was not important in turnover decisions, with the highly pertinent exception of Naval aviators. They cited Kleinman and Zuhoski (1980), who examined the relationship between airline hiring initiatives and loss of Naval pilots for fiscal years 1963 through 1968. They found that: (1) Naval pilot retention increased when airline hirings decreased, and (2) when airline hirings increased by 12,000, naval retention rates decreased by 8 to 10 percent compared to when there was little or no change in airline hiring rates. However, for every three Naval pilots hired by civilian airlines, the Navy lost five pilots. Therefore airline hirings, and their lucrative compensation, are not the sole cause of aviator attrition. Other non-pecuniary factors must enter into consideration.

Poindexter (1998) reports that the results of a survey by the N-88 retention team indicate that pay or other compensation was a recurring source of disappointment among aviators. The retention team report also stressed the need for the Navy to continue to press for legislative initiatives to increase aviation officer compensation. These pay concerns were evident in conjunction with other categories such as quality of life, work environment, and economic trends. These factors, pecuniary and non-pecuniary, should be reflected in the ACOL value. ACCP bonus payments directly address the dissatisfaction with pay, and indirectly offer an inducement to counter the other categories of job satisfaction.

Sullivan (1998) conducted the most extensive recent study on aviator job satisfaction and aviator retention. This study developed a retention survey aimed to quantify Naval Aviation officer attitudes towards job satisfaction and turnover intent. The survey data was gathered from a representative sample of aviators to predict retention behavior and determine appropriate factor measurements associated with job satisfaction. Nearly one-fifth of all respondents cited work dissatisfaction (in general) as a reason why aviators are leaving. A second reason was found to be the unfavorable mix of flying versus collateral duties. Collateral duties increase as an officer accepts the career milestone assignments required to achieve command, particularly aviation department head billets. Among more senior aviators, work and organizational satisfaction issues further refine the decision to stay or leave. This would support an assertion that non-pecuniary factors reflected in the ACOL value as a monetary-equivalent for "taste" for the service are pertinent in retention analysis.

The mix of results from the aforementioned studies indicates that direct comparison of monetary compensation is not the sole determinant of retention; job satisfaction is also a factor to a varying degree in conjunction with financial compensation. Therefore the ACOL technique is a more robust analysis tool than simply comparing bonus award amounts, since it tries incorporate a measure of job satisfaction as a monetary-equivalent value.

B. RETENTION RATES AND PAY INCENTIVES

The advent of an all-volunteer force in the early 1970's caused a heightened concern over the factors that determine the accession and retention of military personnel.

Haber (1973) focused on several non-compensation inducements to enlistment. By examining data on military-civilian pay and wage rate differentials at the inception of the all-volunteer force, he lent support to the view that benefit packages incorporating a variety of non-compensation benefits can be more effective than an approach which emphasizes compensation as the means of attracting young persons to military service. An emphasis on equity in military pay with civilian pay rather than equity in total benefits generates an economic "rent", or inappropriate disparity between total compensation favoring the military. Offering alternative benefit packages of equal value that match the individual preferences of potential volunteers can reduce this. Haber's conclusions indicate that non-compensation inducements have a strong efficacy in generating first-term enlistments.

Goldberg (1982) analyzed the effect of military pay on the retention rates of third-term enlisted personnel in the United States Navy. He found that military pay does have a statistically significant effect on re-enlistment. Further, the elasticity (responsiveness) of third-term retention with respect to pay is much smaller than those previously estimated for first-termers and second-termers. This may indicate that the effect of pay on a retention decision diminishes as seniority increases.

Both Haber and Goldberg give reason to question the wisdom of using bonus systems to alter retention. Cymrot (1987) investigated the effect of selective reenlistment bonuses on retention in the Marine Corps, with contrary results. An ACOL approach was used, permitting factors other than bonuses, such as the civilian unemployment rate, to have an indirect effect on the predicted relationship between bonuses and re-enlistment.

This ACOL model divided the Marine Corps service members into 66 groups based on occupation and level of experience. The size of the bonus payment was determined by multiplying the years of reenlistment, times monthly base pay by a bonus multiplier. Although the magnitude of the effect of the ACOL value on retention varied widely among the groups, in nearly all cases the increases in the re-enlistment rate from the bonus was proportional to the bonus amounts. In many cases the retention rate (which included both re-enlistments and extensions) also increased with the bonus multiplier.

Cymrot's analysis also found evidence that other factors such as civilian unemployment rates, rank, and military job skill area affect the retention and reenlistment rates to varying degrees. None of the other factors examined, however, seemed to have the level of impact of the bonus payments. The strongest of the other factors considered was rank. Higher-ranking Marines were more likely to remain in the service than more junior ones. Current seniority is correlated to future career success, and therefore likely future income stream.

Lane and Melody (1998), in an examination of the impact on pay on the retention of Navy physicians, found that increases in medical special pay to the civilian median level would substantially increase retention. This study observed that the elasticity of retention increased with respect to pay in the wake of managed care reforms that may restrict some compensation levels in the civilian sector. This conclusion may have an analogue in the comparison of a Naval aviator and civilian airline pilot. If so, the ACCP bonus profile would have an effect by closing the discrepancy between airline salary and military payscales.

Counter to this possibility, Rasch (1998) found that the external factors of civilian unemployment and estimated air transportation industry hires have no significant impact on overall pilot continuation rates. This supports the idea that aviators are relatively insensitive to changes in the non-institutional environment affecting them, and refutes the theory that aviators are more likely to leave the service when the airline industry is hiring pilots at increased rates. Rasch notes, however, that other studies have indicated that unemployment and civilian airline hiring have had significant effects on aviator retention. The discrepancy may be attributable to the relatively high continuation rates in his sample from the OMF and the consequential reduction of impact by any variable change. In any case, the relationship between retention and civilian aviator hiring is clearly complex.

Rasch's findings that civilian opportunity is not necessarily a determinant of retention is consistent with Kriegal's (1986) evaluation of financial opportunities for an airline eligible aviator. Kriegal performed net present value calculations on the lifetime pay streams of an officer who resigns his commission at age 30 and proceeds to the airlines, and compares this to an officer who retires from the Navy at age 42 and then proceeds to the airlines with pension benefits. Kriegal found that a Navy pilot will maximize his lifetime earnings by remaining in the military until retirement. If an aviator were to use financial inducements alone as a determinant of his retention decision, than Kriegal's findings would extrapolate to little or no retention shortfalls. One may conclude that other late-career satisfaction factors are significant in retention since these shortfalls exist.

C. CONTINUATION RATES AND RETENTION TOOLS

The difference in the required number of aviators and the actual inventory is caused by a combination of initial accession policy and attrition. The difference, or shortfall, is usually managed by controlling the inventory growth rate, or the rate at which the number of aviators is changing. Accession policy in aviation produces slower than average (or even negative) inventory growth rates when attrition is relatively high, and faster than average growth rates when attrition is relatively low. In most other officer communities, initial accessions are tied to attrition, but in aviation, initial accessions are based on a specific requirement: first sea-tour billets (Cymrot, June 1989). Only first sea-tour billets set the criterion for the initial accession requirement, not billets after the first sea tour. In most communities, when attrition is relatively high, increasing initial accessions stabilizes inventory; when attrition is relatively low, decreasing initial accessions stabilizes inventory. Aviation is different because there is no automatic stabilizing mechanism controlling the inventory. Increases or decreases in initial accessions do not automatically offset increases or decreases in attrition, at least not immediately. This is due to much greater lead-time for an aviator's initial accession to a first sea tour from flight school than found in other communities. The need for an effective aviator retention tool is tied to the need to control attrition as a factor in the inventory growth rate.

The Navy's need for aviation officer retention after completion of initial service obligations stems from the critical shortage of lieutenant commanders to fill billets as squadron department heads or officers in charge (OICs) of aviation detachments. This shortage develops when too many aviators resign commissions between YOS 6 and YOS 11 (Cymrot, April 1989). YOS 6 is the typical career point at which an aviator completes the MSR, and YOS 11 is the career point at which an aviator is eligible for a department head or officer-in-charge (OIC) billet. Long term continuation contracts offered under ACP extend to YOS 14 instead of YOS 11 because this is the expected YOS of an officer's prospective rotation date from a department head or OIC billet.

A retention metric is required to gauge the effectiveness of any retention tool through these significant YOS's. Cymrot, Byrnes, and Schertler (1988) used the Cumulative Continuation Rate (CCR), which serves as the estimate of the probability that a pilot at one YOS will continue in the Navy until some other YOS. The CCR of interest for the previously mentioned ACP target service years is CCR 6-11 (recent reports have used CCR 7-12; see Appendix A).

A CCR is calculated by observing the respective annual continuation rates through each of the years of interest. The continuation rate in year t (C_t) can be formally defined as:

$$C_t = \frac{A_t}{N_t}$$

where N_t is the inventory at the start of year t and A_t is the number of officers on active duty at the end of year t. This definition is usually applied to the continuation of a year group of officers from year to year. Cumulative continuation rates are calculated by multiplying together the continuation rates for the individual years of service drawn from the same year. For example, if the continuation rates for YOS 6, 7, 8, 9, 10, and 11 are all 80 percent in 1999, then the CCR 6-11 would be 26.2 percent."

Cymrot (1989) provides an example of using CCRs to determine the pilot retention shortfalls for a given year group. The number of aviators in a year group is obtained from available data. By using a CCR, the number of pilots in a year group available to fill more senior billets in the future can be estimated, and by comparing it to billet requirements, a shortfall can be forecast. The number of required aviators from that year group available to fulfill future squadron department head and OIC billets is then projected. The required CCR to meet these billets is calculated. The current actual CCR of a more senior year group now filling those department head and OIC billets is calculated. This current actual CCR may be adjusted to forecast changes in conditions such as the number of civilian pilot hires. This CCR as a percentage is then subtracted from the projected required CCR to estimate the probable shortfall.

For example, for all its aviators in year group 80 who are at YOS 6, the aviation fighter sub-community may need a continuation rate of 45 percent, which is required to fill department head and OIC billets when this group progresses to the YOS 11 level of seniority. The time of the probable shortfall calculation would therefore be 1986 (year group 80 at YOS 6). In 1986, the year group then at YOS 11 and therefore serving in department head and OIC billets was year group 75. The actual CCR used for the calculation would be the CCR 6 – 11 of year group 75. If the CCR 6-11 in the aviator sub-community at YOS 11 in 1986 (year group 75) is 33 percent, the retention shortfall is projected to be 12 percent.

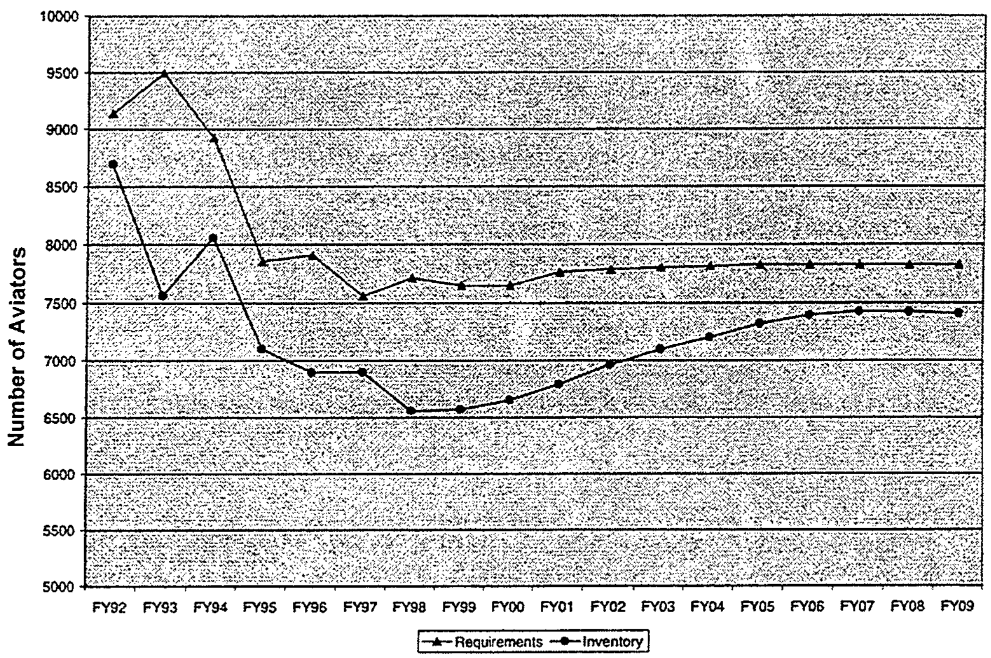
Cymrot *et al.* found that the CCR may not be accurate due to a number of sources of inventory changes besides simple attrition. Officers leaving a cohort may not necessarily leave the Navy or even the aviation community. Officers are typically defined in a cohort by designators and year groups. Officers who were not listed in a cohort during one year may appear as a gain to the cohort's inventory in a subsequent year. Items such as designator changes, accessions of officers who were not on active duty the previous year, changes of designator within the aviation community, and year group changes have an effect on the CCR value. Given that general inflows and outflows due to other than resignation are likely to represent a small number in a given year, it is unlikely that excluding them will have a significant effect on the continuation rate for a particular year. However, even if the effect is small in a given year, the cumulative effect over a group of years could be quite substantial (Cymrot, 1989).

Because pilots who enter a community due to designator changes or other accessions are capable of filling the department head and OIC billets, they should be counted in the inventory used to calculate a CCR. These inflows are not likely to be bonus-eligible, since their MSRs may be atypical. Therefore, the population of aviators eligible for the bonuses may be different than that which is included in this CCR. This inclusion is inappropriate for studying the effect of bonuses. Caution must therefore used when using a particular CCR definition for various purposes. Because the CCR methodology does not necessarily transfer from retention calculations to bonus effect statistics, it is not used in the calculations for this thesis. However, a CCR value is the predominant descriptor in use for retention needs. CCR rates are presented for reference and comparison to thesis calculations in Appendix A.

D. ACP EFFECTIVENESS, CURRENT SHORTFALLS, AND ACCP

Initial data on the ACP program met neither expectation nor requirements (Cymrot, 1990). Short-term contracts, where available, proved more attractive but less efficient than expected. Bonus obligations can run concurrent with other obligations, so some aviators have taken a short-term contract without increasing their total service obligation. Cymrot's (1990) analysis showed that some aviators may have a threshold value below which the value of the bonus is not worth the long service obligation. Some aviators may prefer the flexibility of no bonus to the financial reward of a small bonus. In addition to these initial problems, subsequent bonus awards have declined in real value by 38 percent since the inception of the ACP program in 1989. As expected, retention rates have declined in various sub-communities (Moore, 1997).

The United States General Accounting Office (GAO) reports that according to the most recent data provided as of February 4, 1999, the Navy has already experienced its greatest shortage of pilots. Despite the application of the ACP program, the Navy's shortage of 1,153 pilots, out of a required 7,712 pilots, represented about 15 percent of its pilot requirements. In the preceding fiscal year of 1998, the Navy was short 536 helicopter pilots, 311 propeller aircraft pilots and 216 jet pilots (Gebicke, 1999). According to the GAO report, over the next 5 years the Navy projects that its aviator shortages will gradually lessen, but not disappear. The GAO reports from their questionnaire responses that Navy aviators specifically requested increased pay and benefits. Figure 3 displays the Navy's pilot requirements and inventory for fiscal years 1992-1998 and projected requirements and inventory for fiscal years 1999-2009.



Note: Navy data include both flying and nonflying positions.

(Source: GAO)

Figure 3. U.S. Navy Pilot Requirements vs. Inventory, Fiscal Years 1992-2009

The Center for Naval Analysis (CNA) performed an evaluation of ACCP proposal (Moore and Griffis, 1999). The CNA report examined the possible effects of a reformed ACP program on aviators by community and in the aggregate. The evaluation included a full outline of the ACCP program, comparisons to different ACP bonus amounts, and provided predicted retention effects in terms of quantity and quality. According to the CNA report, ACCP is meant not only to serve as a retention bonus but also to provide greater equality across communities, to create stability in bonus amounts, and to target high-quality aviators. Table 1 outlines the bonus paid to all eligible aviators on a per-tour basis.

Table 1. Fixed Retention Bonus Paid per Tour under ACCP

Tour/Career Milestone	Bonus Payment
Disassociated Sea Tour / Second Junior Officer Squadron Tour	$20K
Squadron Department Head	$24K
Squadron Executive Officer	$19K
Squadron Commanding Officer	$24K
Non-Command O-5	$20K
Deputy Airwing Commander/ Carrier Executive Officer	$24K
Airwing Commander / Carrier Commanding Officer	$24K

ACCP is the only aviation bonus that specifically provides an incentive for sea duty. Aviators do not earn ACCP unless they serve in the specified sea tour. ACCP also targets relatively more dollars to high-quality aviators than does ACP, and also requires that all aviators be paid the same amount for the same tours. Like ACP, it concentrates dollars on aviators at the greatest risk of leaving.

The CNA report used two separate calculations based on different assumptions about career expectations beyond department head. The first assumption is that aviators are optimistic about their prospects of selection to XO/CO and subsequent billets. The second is that the aviators have average expectations. Aviators are considered optimistic if they believe themselves to be in the top 30 percent of department heads. Using this figure and a personal discount rate of 10 percent, the report makes calculations on the value of ACCP payments to the aviators. Findings indicate that ACCP would have positive effect on retention statistics, but that there may nonetheless be shortages in the jet pilot community. An administrative option of increasing the department head bonus for jet pilots when required is recommended (Moore and Griffis, 1999).

E. ANNUALIZED COST OF LEAVING ANALYSIS

Much attention has been devoted to developing models that can predict the effect of changes in military compensation on personnel retention. Warner (1981) developed the ACOL model and used it to analyze alternative retirement systems. The ACOL model differs from similar models in that it introduces a monetary-equivalent factor denoting a taste for service explicitly into the model. The model then derives the time horizon that is relevant for retention decision-making and the military-civilian pay differential over that horizon. This pay differential is the cost of leaving. The retention rate at the end of length of service (LOS) t is the proportion of individuals for whom the actual pay differential, or cost of leaving (COL), is less than the pay differential required for the aviator to leave the service. The required pay differential is unique for each aviator, based upon his or her value of the financial inducements and the 'taste' factor for service.

Riebel's (1996) data showed that financial incentives, in the form of aviation bonus awards, have an impact on retention of aviators. He used the ACOL method to estimate the effect of ACP on the likelihood of a resignation decision over any point within a span of 20 years of service, or retention and retirement at 20 years. He stated that the result of doubling the yearly contract payment amounts of the ACP bonus is estimated to increase retention of aviators by .625 percent over this period. Recalling that ACP is only offered up to YOS 14, the Reibel analysis considered a 20 year period over which ACP bonus contracts did not completely span, possibly limiting the retention effect.

The ACOL model uses the following definitions:

M_j = the individual's expected military pay in each future year of service, $j= 1,\ldots,s$;

R_{jn} = yearly retired pay the individual will receive after n more years of service, $j = n + 1,\ldots T$, where T equals life expectancy;

W_{j0} = the future civilian earnings stream the individual expects to receive if he leaves immediately, $j = 1, \ldots, T$;

W_{jn} = the future civilian earnings stream the individual expects to receive if he leaves after n more years, $j = n + 1, \ldots, T$;

ρ = the individual's yearly discount rate.

Warner defined γ_m and γ_c' as the annual monetary equivalents of the non-pecuniary aspects of military and civilian respectively. The individual's retention decision is assumed to be based on utility maximization. The utility of remaining in the military until retirement exceeds the utility from leaving immediately only if the present value of military pay plus the monetary equivalent taste factor for military life over the *n* year period, plus the present value of retirement pay and post-military civilian pay and the taste factor for civilian life over the remaining years of life, is greater than the present value of the sum of civilian pay and the taste factor for civilian life if the individual leaves immediately. Represented symbolically, the utility of remaining in military service until retirement is greater if:

$$\sum_{j=1}^{n}\frac{M_j+\gamma_m}{(1+\rho)^j}+\sum_{j=n+1}^{T}\frac{R_{jn}+W_{jn}+\gamma_c}{(1+\rho)^j}>\sum_{j=1}^{T}\frac{W_{j0}+\gamma_c}{(1+\rho)^j}$$

Alternatively:

$$C_n=\sum_{j=1}^{n}\frac{M_j}{(1+\rho)^j}+\sum_{j=n+1}^{T}\frac{R_{jn}+W_{jn}}{(1+\rho)^j}-\sum_{j=1}^{T}\frac{W_{j0}}{(1+\rho)^j}>(\gamma_c-\gamma_m)\sum_{j=1}^{n}\frac{1}{(1+\rho)^j}$$

or in abbreviated form:

$$C_n>\delta\sum_{j=1}^{n}\frac{1}{(1+\rho)^j}$$

where C_n is the cost of leaving and δ is the net preference for civilian life over military life $(\gamma_c-\gamma_m)$. Dividing both sides by $\sum\frac{1}{(1-\rho)^j}$ they express the condition for remaining in the military as:

$$A_n=\frac{C_n}{\sum_{j=1}^{n}\frac{1}{(1-\rho)^j}}>\delta$$

with A_n as the Annualized Cost of Leaving over the horizon of the length of service.

The individual will leave only if the strategy of leaving immediately is preferred to any strategy that involves staying, or $A_n < \delta$ for all n= 1,..,s. The determining ACOL value will maximum value of A_n for $n = 1,\ldots,s$.

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III. DATA AND METHODOLOGY

A. RATIONALE

This thesis has analyzed the administration of ACCP and its various distribution packages with aviation sub-communities and the effect on aviation continuation rates in ACOL logit regression models. The cost of leaving values (COL) for these models are derived from actual pay and bonus values under ACP. Additional independent variables are marital status and the number of dependents.

The dependent variable for each model is a Bernoulli (two-valued) stay-or-leave indicator for each significant YOS point in an aviators career for which a COL value was calculated. These points were chosen to approximate ACCP significant career milestone points. The likelihood of retention is the likelihood of the stay-or-leave indicator to have the value defined as indicating "stay."

The intuitive result is that as the ACCP bonus awards are applied to each respective point in an aviator's career, the cost of leaving will increase, increasing the likelihood of retention at that point. The total ACCP bonus profile is an enticement toward continual career advancement, offering financial incentives to challenging billets that may contribute to job dissatisfaction. Job dissatisfaction is reflected in the COL value. Manipulation of the COL by financial incentives should positively correlate to the likelihood of retention at the point the ACCP bonus is administered. These expectations are supported by the analysis.

B. DATA DESCRIPTION

The Department of Defense Manpower Data Center (DMDC), Monterey, California, maintains data on all active duty and active duty reserve aviation officers in the Officer Master Files (OMF). Data from fiscal years 1990 to 1997 limited to aviation designators was drawn from this source. Since ACP in its current form was created in 1989, OMF files prior to and including that year need not be considered. At the end of 1998, the administrative policies guiding the awarding of ACP were changed significantly to prepare for the inception of ACCP. In addition to this change, officers who had not completed their MSR or had not tendered their resignation prior to 1998 would not show a departure from service in the DMDC data until after 1998. These officers would be making a resignation decision under altered ACP policies. For these reasons 1998 and 1999 were not considered. The number of individual officer records obtained from DMDC totaled 29,939.

Naval Military Personnel Command (NMPC) supplied two data sets to augment the DMDC data. The first was a listing of all officers who had received a bonus under ACP from 1990 (the first full year of ACP) to present. This data included the total bonus entitlement and the yearly installment for the contract term dates of each recipient. Under most ACP contracts, the bonus is administered with a lump sum payment at the inception of the contract equal to 50 percent of the total entitlement, with the remainder awarded in equal yearly installments. For the purpose of this study, the annual installment was used to calculate ACOL values and the lump sum payment was discarded since it could not be considered as part of an aviator's annual pay profile.

Combining the NMPC bonus file into the DMDC data set posed a significant challenge. The Federal Privacy Act of 1974 led the component office of NMPC that was the source for this data to decide not to include Social Security numbers as a field in the data set. Thus the bonus files could not be directly integrated into the DMDC data since Social Security numbers serve as the primary key for the DMDC data. A field-by-field character comparison was used over several fields in both data sets to resolve matches. 1,263 of the 1,451 NMPC bonus file records were matched with the DMDC data records, and the bonus installments from these were used as the primary source of these officers' annual bonus payments. Where there was no NMPC bonus information, DMDC data was used if available. It should be noted that bonus installment amounts from these two data sources did not necessarily match. For the purpose of this study, the annual installment was used to calculate ACOL values and the lump sum payment was discarded since it could not be considered as part of an aviator's pay profile and lump sum amounts were not always available in the data.

Resignation data was acquired from NMPC from 1996 and beyond. Resignations were tracked with effective dates into fiscal year 2000. Although they are beyond the 1998 limit, resignations effective in 1999 and 2000 were retained as valid data points since they could be projected into the resignation year and still allow computation of a valid cost of leaving value. Prior to 1996, the only method available to determine a likely resignation is a failure to appear in the data set in a succeeding year. For example, if an aviator appears in the 1993 subset of data, but does not appear in the 1994 subset, that aviator is deemed to have had a resignation take effect in 1993. Designator changes, failure to select for promotion and subsequent release from active duty, or other non-resignation attrition are not discriminated from a resignation prior to 1996. All aviators that failed to appear in a succeeding year after 1995 but were not listed as a resignation were deleted from the data set.

The final data set fields included social security number, name, year group, designator, paygrade, aircraft type, MSR, ACP start and stop dates, ACP annual installments, total years of service, marital status, number of non-spousal dependents, current active duty status, command screen results, and additional qualification designators (AQD). Missing data were frequently found in several fields. If the year group was unrecorded, a value was deduced from the date of first commission or from the active duty base date. If the MSR was unavailable, adding six years to the date of first commission (regardless of designator) or year group estimated a value. The total years of service was deduced by subtracting the date of first commission from either the year the aviator effected a resignation or one year prior to his disappearance from the data set. Records that had pertinent fields missing and could not have their values estimated or deduced were deleted from the data set. Designators were limited to 1310, 1315, 1320, and 1325 to incorporate only regular pilots and Naval Flight Officers (NFOs) and reserve pilots and Naval Flight Officers on active duty.

Finally, the aviation sub-communities were restricted to HC – H46 helicopter, HM – H53 helicopter, HS – SH60F carrier based helicopter, HSL – SH60B and H2 small deck-based ASW helicopter, VAQ(pilot) – EA6B Prowler, VAQ(NFO), VAW(pilot) – E2C Hawkeye, VAW(NFO), VF(pilot) – F14 Tomcat, VF(NFO), VFA – F18 Hornet, VP(pilot) – P3 Orion, VP(NFO), VQ(TACOMO/EP-3 pilot) – shore-based electronic warfare aircraft, VQ(TACOMO/EP-3 NFO), VQ(jet pilot) – EA3 and ES3A, VQ(jet NFO), VS(pilot) – S-3B Viking, and VS(NFO). These aviation sub-communities are the ones that have been eligible for bonus payments under ACP. Although aviators that have flown the A-6 Intruder medium attack aircraft have been eligible for bonus payments, the A-6 sub-community has recently disbanded and was not included in the data set. Aviators who were listed in recent years as in the A-7 Corsair sub-community were included with the F-18 sub-community since most A-7 aviators eventually transitioned to this aircraft. Likewise, F-4 Phantom pilots were transitioned to the F-18 sub-community and F-4 NFOs were transitioned to the F-14 sub-community.

The paygrade field often displayed a lag from the time an aviator should have been promoted based on years of service. For example, it was common to see the paygrade field unchanged for two years after a promotion should have been recorded. Since paygrade is a determinant of an officer's pay amount, the paygrade field was updated to account for as much as a three-year lag in paygrade updating. If an aviator displayed a paygrade with an update lag beyond three years, then the aviator was considered a prior-enlisted service member and removed from the data set. If an aviator displayed a paygrade that was more than two years earlier then the normal promotion window, the aviator was regarded as errant data and deleted from the data set. The total resultant data set used for calculations totaled 13,750 records.

Significant YOS points chosen for this analysis are 9, 11, 16, and 21 years. A Bernoulli stay-or-leave indicator was generated to indicate if the aviator chose to remain on active duty up to and including the YOS represented by the indicator. The 9-year point was chosen since this is the point in a typical aviation career path at which an aviator would have completed his/her MSR and would likely be acceding to a disassociated sea tour or second squadron tour. The 11-year point was chosen because this is the point where an aviator could begin a squadron department head tour.

The 16-year point was chosen because this is the point at which an aviator could begin a combined tour as executive officer of a squadron and then succeed to command the squadron, or would accept orders to a non-command seagoing billet. The 21-year point was chosen as the point at which an aviator could begin the career path for a carrier command or carrier executive officer billet, or an airwing command or deputy command billet. Table 2 lists the total number of aviators in each sub-community, plus the numbers continuing at each of four significant YOS points.

The stay-or-leave indicators do not represent a CCR calculation. However, they may be compared to CCRs for a rough approximation. The typical department head tour begins at approximately YOS 11 and ends at some point into YOS 13. Therefore, the percentage of stay-or-leave at 11 indicators that indicate true among those that were on active duty at YOS 9 (stay-or-leave at 9 indicating true) could be used as a comparison point to the CCR 7-12 for rough verification. These CCR values are included in Appendix A for comparison.

Table 2. Profile of Data Observations

Sub-community	Observed	YOS 9	YOS 11	YOS 16	YOS 21	Married	Avg. Num. Child.
VFA	1246	874	635	414	205	78.5%	1.03
VF(pilot)	536	402	345	196	88	85.2%	1.26
VF(NFO)	661	549	499	362	170	86.3%	1.33
VAQ(pilot)	234	159	117	54	23	74.3%	.97
VAQ(NFO)	652	441	326	168	52	77.8%	.97
VAW(pilot)	510	291	191	104	41	74.9%	.93
VAW(NFO)	613	429	342	186	69	81.4%	1.07
VS(pilot)	467	319	243	133	84	80.3%	1.09
VS(NFO)	752	528	415	227	68	77.3%	.99
VP(pilot)	2262	1303	971	571	255	80.9%	1.12
VP(NFO),	1820	1275	1030	631	225	81.3%	1.24
VQ(TACAMO/EP-3 pilot)	74	54	45	34	13	75.7%	1.24
VQ(TACAMO/EP-3 NFO)	147	120	114	70	20	82.3%	1.39
VQ(jet pilot)	26	21	18	15	6	76.9%	1.54
VQ(jet NFO)	79	63	53	37	7	88.3%	1.03
HS	35	31	29	12	3	85.7%	1.2
HSL	2670	1936	1542	778	325	77.3%	1.07
HC	778	529	403	222	84	74.9%	.96
HM	188	141	110	40	11	76.6%	.99
Total:	13750	9465	7428	4251	1749	79.4%	1.10

C. PAY CALCULATION

Pay to be received at some future date requires discounting to reflect its present value to the aviator. For each year in the future that an aviator's potential pay is perceived, the value must be decreased by a percentage that equates to the chosen discount rate.

Discounting the potential military paystream, the potential civilian paystream, and the potential retirement pay required the selection of personal discount rate. Consistent with Warner and Pleeter's (1994) calculation of personal discount rate of .104 using a linear model of officers who participated in bonus programs used for drawdown separation incentives, a personal discount rate of 10 percent was chosen. All discount calculations were begun from each of the four significant YOSs to 20 years and 25 years for military pay, and to age 65 for civilian pay. Age 65 was chosen as the standard senior retirement age where income streams other than retirement portfolios are no longer of interest to the individual.

Warner's original ACOL calculations assumed that an individual would base his personal calculations for a cost of leaving on the assumption that he/she would serve for 20 years and retire. Although a 20-year pay profile would include an aviator's opportunity to serve in most of the career milestone billets covered under the ACCP bonus profile, the senior billets of Deputy Airwing Commander/ Carrier Executive Officer and Airwing Commander / Carrier Commanding Officer are beyond YOS 20. Therefore this analysis conducted a separate cost of leaving calculation for retirement at 25 years service. This allowed for an estimation of a cost of leaving factor at 21 years, with the assumption that the aviator would retire at YOS 25. In addition, calculations for the cost of leaving at earlier years of service were performed, based on the assumption that the aviator would consider attempting attainment of one of the senior billets beyond the 20-year retirement point and retire at YOS 25.

Potential civilian pay for all ACOL calculation was drawn from the Statistical Abstract of the United States, 1998. The individual pay profile chosen to best match a military officer entering civilian life was that of a college-educated individual with some middle-management experience and training beyond undergraduate education. The accepted pay profile differentiated by education level. The education level that best approximated an Naval aviator was a master's degree. This profile is displayed in Table 3.

Table 3. Mean Earnings by Degree

Age of person with highest level of degree as Master's	Mean Earnings (dol.)
18 to 24 years old	26,621
25 to 34 years old	35,626
35 to 44 years old	58,624
45 to 54 years old	56,022
55 to 64 years old	45,391
65 years old and over	29,689

(Source: Statistical Abstract of the United States 1998, Table No. 263).

Each year of pay was discounted from the age of the aviator at each significant YOS to age 65, and for the age of the aviator at YOS 25. The total discounted pay from the significant YOS was then summed to give a total discounted pay value for civilian pay. Each aviator was therefore matched with a potential civilian pay value for his or her age at YOS 9, YOS 11, YOS 16, YOS 21, and YOS 25. Instead of calculating a separate discounted civilian pay profile for an aviator who retired at YOS 20, the civilian pay profile for YOS 21 was used to approximate this value. The YOS 21 civilian pay profile was therefore used twice – once for a 20 year retirement, and once for the ACOL calculations for 21 to 25 years of service. Since the civilian earnings for a 20-year retiree may not begin until after the 20th year of service is completed, this was deemed justified in an effort to simplify calculations.

The military earnings were calculated by using the fiscal year 1998 Navy pay profile. The 1998 profile was chosen because the Navy pay profile is adjusted for inflation by annual cost of living increases. An aviator's actual 1990 pay, adjusted for inflation to 1998, should approximate closely the 1998 pay profile entry for the same rank and number of years of service. The 1998 pay profile can therefore serve as an inflation-adjusted base pay source. This also allowed consistency with the civilian pay profiles drawn from a 1998 source.

The pay level was determined using the base pay and the Basic Allowance for Housing (BAH) for the rank that is most consistent with the officers' years of service. Since the data indicated a significant update lag for paygrade, this was deemed the best determinant index for pay. To simplify calculations, the BAH rate for a married officer was used for all officers. The base pay and BAH were added to the ACIP value for the aviators' years of service and the resultant was discounted for each year beyond the significant YOS decision point being calculated, and then summed. This calculation was conducted for both 20 and 25 years of service. 1998 pay and ACIP rates are included in Appendix B.

D. BONUS CALCULATION

Many records listed an ACP bonus start or stop date but no bonus installment provided. After examination of the data, it was determined that these aviators were likely under the AOCP, versus the ACP bonus system. AOCP bonus installment data was not available, and bonus payments not taken could not be estimated. These records were removed from the data set to form a second data set. The removed records could not be considered until the ACOL values at and past 16 years of service were calculated. 16 years of service is the significant YOS selection in which all bonus payments have been administered already and ACP or AOCP could be considered a sunk cost not pertinent to cost of leaving calculations. The total records removed were 3187. The second data set was used for calculations for YOS 9 and 11 only. The original data set was used for calculations for YOS 16 and 21.

Significant in this study is the use of actual ACP bonus amounts for the pay calculations. Future actual ACP bonus amounts for those who had not completed their ACP contract were determined by the annual bonus entitlement in the data set projected to the stop date of the ACP contract in effect. The advantage of using the actual bonus amounts is two-fold. First, this expected amount is the amount actually used in each aviator's personal calculations at the decision point to remain on active duty. This amount need not necessarily be the maximum annual award to which the aviator was entitled. Second, the bonus amounts differ greatly for each aviation sub-community and year group. As previously stated, the bonus amounts are administratively determined for each sub-community and year group up to the maximum allowed by law based on the Navy's need for retention in that sub-community and year group.

The effect of raising or lowering the bonus amount, and a sub-community's relative proclivity to resign, can be assessed via the logit relationships in the next section. Including the actual annual entitlements at least partially accounts for differences in a sub-community's proclivity to engender resignations, since the bonus amounts are thus tied to a specific sub-community's likelihood to remain in the Navy.

For officers not acceding to further years of service, an estimate of the bonus amount forgone is required. For this value the referenced amount was the annual bonus amounts for which an aviator was eligible, based upon his or her sub-community and year in which MSR was completed. This amount was multiplied by the number of years between MSR completion and YOS 14 (the latest YOS at which ACP bonus entitlements are distributed) to assess the total award, and the resultant halved to account for the 50 percent lump sum payment up front. The remainder was distributed through the bonus eligible years of service as annual payments and discounted from the significant decision points of YOS 9 and 11. These payments were summed, with the resultant used as an estimate of the max bonus an aviator would have received had he or she remained in the service.

The amount of the ACP bonus for which an aviator was eligible was determined using the original bonus recommendations and the ACP history reference in the ACP annual report (McKenzie, 1999). The resultant bonus profiles are found in Appendix C.

E. MODEL DEVELOPMENT

Other studies have used the maximum ACOL value through 20 years of service as an independent variable (Warner, 1981; Riebel, 1996; Rogge, 1996). This approach does not account for the decision gates of accepting orders to one of the career milestone tours at a specific year of service. Therefore this study has used only the ACOL values at the significant YOS decision points. These points are where the ACCP bonus profiles would have impact, since the bonus amounts administered would be initiated at these years of service. The previous studies also used a stay-or-leave indicator that pertained to a decision to stay through YOS 20 or leave at any time prior to retirement eligibility. This analysis targets the significant decision points, since the bonus profile is dependent on them.

The independent ACOL variable was calculated as follows:

$$COL_{ij} = MP_{ij} + RP_{ij} + CPR_j + BP_i - CPD_i$$

where the following definitions apply:

- i = Year of the significant YOS decision point (9, 11, 16, or 21 years).
- j = Year of retirement (20 or 25 years).
- COL = The cost of leaving value at the decision YOS (i) for the year of retirement in question (j).
- MP = The present value of the military pay from the decision YOS (i) for the year of retirement in question (j).
- RP = The present value of the retirement pay for the year of retirement (j) in question and discounted for the age at the YOS of the decision point (i) to age 65.
- CPR = The present value of the estimated civilian pay from the year of retirement in question (j).
- BP = The present value of the bonus annual installments, predicted or actual, from the decision YOS (i).
- CPD = The present value of estimated civilian pay from the age at the decision YOS (i).

The specification for the equation of the model is as follows:

$$\text{logit}(\text{STAY}_i) = \beta_0 + \beta_1 \times COL_{ij} + \beta_2 \times MARRIED + \beta_3 \times NOCHILD + \beta \ \times SUBCOM$$

where:

- i = Year of the significant YOS decision point (9, 11, 16, or 21 years).
- j = Year of retirement (20 or 25 years).
- $STAY_i$= the binomial decision to stay or leave at a significant YOS decision point (i).
- COL_{ij} = The cost of leaving value at the decision YOS (i) for the year of retirement in question (j).
- MARRIED = The binomial indicator of marital status.
- NOCHILD = The number of dependent children.
- SUBCOM = The categorical indication of the subject's aviation sub-community.

The model equation was used to estimate the coefficients of the main effects. The coefficients were then used as estimation parameters for the increase in retention percentage at the significant career decision points. A goodness-of-fit test was conducted to determine the significance of the cost-of-leaving dependent variable.

Logit coefficients can be difficult to interpret. Although logit models are linear with respect to the logits, they are nonlinear with respect to the probabilities of the dependent variables. The coefficient for the cost-of-leaving term of the logit model equation can be interpreted as follows: Each one-unit increase in X_1 (cost of leaving in thousands of 1998 dollars) multiplies the odds favoring the dependent variable Y = 1 (Stay = 1) by $e^{\beta 1}$, if the other independent variables remain the same. Another way to say this is that the odds favoring Y = 1 change by $100(e^{\beta 1} - 1)$ percent with each one-unit increase or decrease in X_1 (Hamilton, 1992). Extending this to the retention model, a one-unit increase in the cost-of-leaving term in the model increases the retention at the YOS decision point by $100(e^{\beta 1} - 1)$ percent, with β_1 being the coefficient of the cost of leaving term in the model. The cost-of-leaving term may be increased by the addition of a bonus award. This allows for the direct comparison of bonus awards to retention statistics.

The χ^2 statistic used to test the significance of the equation is a comparison against a null hypothesis that the coefficient is zero. This test measures the increase in the model's fit (as measured by the deviance) when the term in question is added. If the term has no effect, the deviance ought to decrease by an amount comparable to a χ^2 random variable (with degrees of freedom equal to the number of degrees of freedom in the term). If the decrease in deviance is much larger then expected from a χ^2 random variable, there is evidence that the term significantly improved the fit of the model.

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IV. RESULTS

A. EVALUATION METHODS

The logit regression was run for each of the stay-or-leave dependent variables and each of the retirement points. A coefficient of the cost-of-leaving effect and the other effects was determined, and a χ^2 goodness-of-fit test was conducted to determine the significance of each effect. The results of the models determined without the sub-community factor (i.e. all sub-communities are included in the model) are listed in Appendix D. The model results for each specific sub-community are included in Appendix E. A summary of the cost of leaving effects without sub-community as a variable is listed in Table 4.

Table 4. Cost of Leaving Effect on a Regression Model Throughout All Aviation Sub-Communities

Regression Model	Mean COL	Coefficient	$Pr > \chi^2$	Effect on Dep. Var.
9 YOS Retire 20	759.857	0.002294	0.1199045#	0.2296
9YOS Retire25	980.697	0.001177	0.5493674#	0.1170
11 YOS Retire 20	695.856	0.004943	0.0360328*	0.4955
11 YOS Retire 25	827.975	0.001162	0.4121465#	0.1163
16 YOS Retire 20	546.937	0.013933	2.33146E-15**	1.4031
16YOS Retire 25	999.167	0.006099	2.10942E-15**	0.6117
21 YOS Retire 25	470.396	0.019152	0.0000000**	1.9336

Notations:

Mean COL listed in thousands of dollars.

- * significant at the 95% level
- ** significant at the 99% level
- \# not significant

This interpretation allows the computation of a change in the probability of Stay = 1 for any change in the cost of leaving value in the models based on the coefficient of the cost of leaving term, provided all other effects are held constant. Performing this computation on each of the models yields a value α. This value was interpreted as follows: for every thousand dollars of increase in the cost of leaving independent variable, the likelihood of an aviators who was on active duty at the previous stay-or-leave indicator point to remain on active duty at the current stay-or-leave indicator point will increase by α.

An example of the how Table 4 may be used follows: Aviators in the data set at 16 years of service who show the COL value to be significant (at the 99 percent level, or the retention prediction is at least 99 percent likely to be more accurate than without considering the COL value). This is true whether these aviators consider life earnings with a 20 or a 25 year retirement. If one assumes they consider a 20 year retirement, the effect on the likelihood of the aviators being retained through 16 years of service increases 1.4031 percent for every thousand dollar increase in the COL. Therefore if an aviator is offered a bonus of 10,000 dollars at 16 years (including the possibility of future bonuses, providing the future bonuses are discounted to the present time frame) then his or her likelihood of retention would increase 14.031 percent.

The effect of the bonus payments on retention must be discounted, since the cost of leaving factor is discounted from a future time frame. The bonus payments for each of the career milestone tours were discounted from each of the significant YOS points using the 10 percent discount rate. The results listed in Table 5 assumed the following conventions:

- A squadron department head tour would last 2 years with 2 annual bonus payments at YOS 11 and YOS 12.
- A squadron executive officer (XO) tour would last approximately one year beginning at YOS 16, succeeded by a squadron commanding officer (CO) tour at YOS 17. Each of these YOS points would be the award points for the entire respective tour's bonus payments over that year. This award period of one year approximates a XO or CO tour, which is normally 15 months in length.
- A nonscreen O-5 sea tour would last 3 years beginning at YOS16.
- For simplification of calculations, subsequent tours to the O-5 paygrade were grouped together as O-6 bonus tours beginning at YOS21 and lasting to YOS 23.
- Disassociated Sea Tour / Second Junior Officer Squadron Tour bonuses were not discounted, since they were never used in retention estimate calculations.

Table 5. Discounted Bonus Amounts Under ACCP for Various YOS Consideration Points

Bonus tour at YOS point for discounting	Discounted amount ($K)
Squadron Department Head Bonus at 11	22.9
Non-Command O-5 Bonus at 11	11.3
Squadron Executive Officer Bonus at 11	11.8
Squadron Commanding Officer Bonus at 11	13.5
O-6 Bonus at 11	8.0
Non-Command O-5 Bonus at 16	18.2
Squadron Executive Officer Bonus at 16	19
Squadron Commanding Officer Bonus at 16	21.8
O-6 Bonus at 16	14.2
O-6 Bonus at 21	22.9

B. MODEL TRENDS

Table 4 indicates χ^2 values for the YOS 9 models in which the cost-of-leaving variable is not sufficiently significant to continue use for forecasting retention statistics. Appendix D shows that the retention decision through YOS 9 may be more dependent on the effects of marital status and the number of dependent children. This is not surprising, since financial benefits are likely to be weighed against the family quality-of-life needs for the 25 to 35 age group that would be found at YOS 9. In view of these results, the cost-of-leaving factor was not deemed a sufficient predictor of retention likelihood at the significant point of YOS 9, and retention statistics into the disassociated sea tour could not be modeled.

The same condition existed for the YOS 11 significant decision point when retirement at 25 years of service is considered. When retirement at 20 years of service is considered, however, the YOS 11 model shows significance for the cost of leaving effect at the 95 percent level. The lack of significance at the 25-year retirement point as opposed to the 20-year point may indicate that an 11-year aviator's "view" to the future does not exceed the 20-year mark, a time at which the aviator may be considering a second career. The cost-of-leaving effect has increasing significance at YOS 16, and its greatest significance at YOS 21.

The cost of leaving's proportional effect on the dependent variable decreases throughout all models as the retirement point is moved from 20 to 25 years. Those aviators that remain past 20 years of service are past the point of guarantee for receiving the economic security of a pension, so this decrease in effect is consistent with expectation. Notable is that dependent children are not significant at the 5 percent level for the 21-year significant decision point model. At the typical age of an aviator at 21 to 25 years of service the dependent children may be older and not of an age to engender great quality-of-life consideration in a retention decision.

C. PROJECTION OF ACCP EFFECTS ON RETENTION

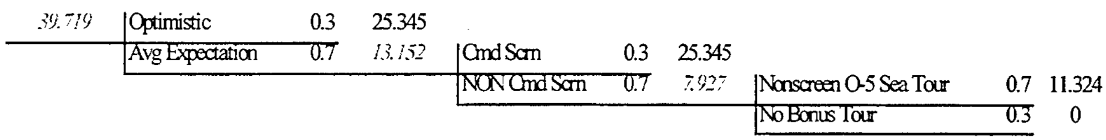
The proportion of effect of these models listed in the last column of Table 4 can be coupled with the method of projecting the efficacy of ACCP used by Moore (1997). Moore used a set of perceptions of probable advancement coupled with actual advancement rates to achieve retention predictions. Because ACCP bonus awards are tied to the career milestone billets in an aviator's career path, the bonus earning that an aviator expects depend on how the aviator perceives his chances of selecting to the more senior ACCP billets. Therefore the aviator will base his cost of leaving estimations on those perceptions.

If two separate assumptions are made about the career expectations of aviators, this allows calculations of average perceived future bonus awards. The first assumption is that an aviator may be optimistic about his/her perceived likelihood of advancing through the career milestone billets, opting to assume certainty for future bonus awards. Based on data available, Moore stated that this meant an aviator would rank him or herself in the top 30 percent of all aviators. The second assumption is that aviators have average expectations – defined as equating their own chances of selection from department head to executive officer through to command as the averages found in data on past accession rates.

Moore used a figure of 30 percent for command screen rate, with the assumption that 100 percent of all aviators who stay expect to be a department head. The data in this analysis indicated a command screen rate of about 15 percent of all aviators beyond YOS 14. Since the individual cost of leaving calculations are based on perceptions and not the actual screen rates, and to maintain consistency with Moore's analysis, the 30 percent command screen rate was used, with a 100 percent rate of accession to department head.

Interpreting these assumptions to mean that 30 percent of all aviators perceive that they will assuredly achieve squadron command, and the remainder perceives a 30 percent chance of the same advancement, a decision tree can incorporate these rates with the discounted ACCP bonus awards from Table 5. The result should indicate an average perceived total future bonus award, discounted for the time of the significant decision point for which it was calculated. Figure 4 displays the decision tree for YOS 11 considering retirement at YOS 20.

The YOS 11 significant decision point is represented at the left apex of the decision tree. From this point (moving to the right), 30 percent of the aviators perceive that they will achieve an executive officer tour and succeed to a commanding officer (labeled 'optimistic'). The combined discounted bonus pay for an executive/commanding officer tour in thousands of dollars ($25.3K) for YOS 11 is noted at the right of the upper branch. The remaining 70 percent of aviators perceive their chances of succession to an executive/commanding officer tour as the assumed command screen rate of 30 percent, requiring another 30/70 percent branch to the right. This new 30 percent branch again has the combined discounted bonus pay for an executive/commanding officer tour ($25.3K). Those that do not screen for command (the 70 percent branch) have the option of acceding to a nonscreen O-5 sea tour. For this analysis the assumption is that the take rate for this tour of 70 percent. The final branch represents this take rate. The bonus award for a nonscreen O-5 sea tour discounted to YOS 11 is located on the upper of the far right set of branches ($11.3K).



Resultant values are $K

Figure 4. Average Perceived Discounted Bonus Entitlements from ACCP at YOS 11 Considering Retirement at 20 Years

Each node in the tree represents the sum of the discounted values to its right, weighted by the percentages of its branches. The average perceived discounted bonus award is the total average of the possible discounted O–5 bonus awards from all branches, working from right to left, coupled with the discounted department head bonus award ($22.9K). This sum is at the left apex in thousands of dollars ($39.7K). Since O-6 awards are beyond 20 years, they are not included in this tree.

Figure 5 displays the tree for the YOS 16 significant decision point considering a retirement at YOS 20. In this case the command screen likelihood is nearly a forgone conclusion, since executive/commanding officer tours begin at about YOS 16. Therefore no branching for the optimism level of the aviator's perception is required.

21.182	Cmd Scrn	0.300	40.818			
	NON Cmd Scrn	0.700	*12.766*	Nonscreen O-5 Sea Tour	0.700	18.237
				No Bonus Tour	0.300	0.000

Figure 5. Average Perceived Discounted Bonus Entitlements from ACCP at YOS 16 Considering Retirement at 20 Years

Figure 6 displays the tree for the YOS 16 significant decision point considering a retirement at YOS 25. Again, the initial command screen likelihood is a forgone conclusion. However, a screening to an O-6 bonus eligible billet is still a matter of perception for the aviator. For the purposes of analysis, the command screen rate and the 'optimistic' rate used for O-6 seagoing command is 20 percent.

22.718	Cmd Scrn	0.3	*45.939*	Optimistic	0.2	14.225			
				Avg Expectation	0.8	*2.845*	O-6 Bonus Tour	0.2	14.225
							No O-6 Bonus Tour	0.8	0
	NON Cmd Scrn	0.7	*12.766*	Nonscreen O-5 Sea Tour	0.7	18.237			
				No Bonus Tour	0.3	0.000			

Figure 6. Average Perceived Discounted Bonus Entitlements from ACCP at YOS 16 Considering Retirement at 25 Years

Figure 7 displays the tree for the YOS 21 significant decision point. The screen to an O-6 bonus eligible billet is a forgone conclusion. Only the 20 percent command screen rate, and not the 'optimistic' perception rate of 20 percent is required.

4.582	O-6 Bonus	0.2	22.909
	No O-6 Bo	0.8	0

Figure 7. Average Perceived Discounted Bonus Entitlements from ACCP at YOS 21 Considering Retirement at 25 Years

These average perceived discounted bonus awards are in the same "perceptual" dollars as those in the cost-of-leaving calculations. Since there is a common unit between the cost of leaving values and the perceived bonus dollars, and an indicator of the strength of the effect of these dollars is available from the logit regression models, we can estimate the effect on retention at each of the YOS decision points where significance of the cost-of-leaving effect was evident. Using the proportional effects on the "Stay" dependent variable available in the last column of Table 4, we can find Δ, defined as the percentage change in the likelihood for a 'true' stay indicator, for the significant decision point for the perceived discounted bonus dollars in each model profile. Table 6 displays the results.

Table 6. The Estimated Change in the Probability of Retention Through Given Significant Year of Service Decision Points

Model Profile	APDBE*	Proportional Effect	Δ Stay(%)
Stay at YOS 11 considering retirement at YOS 20	39.719	0.4955	19.68
Stay at YOS 16 considering retirement at YOS 20	21.182	1.4031	29.72
Stay at YOS 16 considering retirement at YOS 25	22.718	0.6117	13.90
Stay at YOS 21 considering retirement at YOS 25	4.582	1.9336	8.86

***Average Perceived Discounted Bonus Entitlement (SK) = bonus awards discounted at an annual rate of 10% into the future from the decision YOS. Start aviator pool from YOS 9.**

The information in Table 6 could be interpreted as follows: Aviators on active duty at YOS 11 who were on active duty at YOS 9, following the normal prescribed career path, will perceive an average discounted bonus of $39.719K through to retirement at 20 years. The proportional effect of cumulative bonus award at YOS 11 is estimated at

0.4955 percentage points per $1K of discounted bonus award. The change in the likelihood of an aviator to choose to remain on active duty through YOS 11 due to this discounted bonus amount is therefore estimated as 19.68 percent.

V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

This thesis developed an Annualized Cost of Leaving (ACOL) model for Navy Aviators. Of specific interest was the integration of data from the Aviation Continuation Pay program (ACP) with reference to administration of bonuses for the purpose of enhancing aviator retention statistics. The ultimate purpose of the analysis was to project the eventual effect on aviator retention of the proposed Aviation Career Continuation Pay program (ACCP).

The ACOL analysis set significant retention decision points in an aviator's career path that reflect the award gates for ACCP. The points chosen were 9, 11, 16 and 21 years of service. The cost of leaving profiles chosen were for an aviator seeking retirement at 20 years of service, and for retirement at 25 years of service.

Specifically, this thesis finds:

1. The level of significance of the coefficient cost-of-leaving effect is below the 5 percent level for an aviator at 9 years of service and considering retirement at either 20 or 25 years, and for an aviator at 11 years of service considering retirement at 25 years.
2. ACCP is likely to increase retention for aviators at 11, 16, and 21 years of service.
3. The estimated increase in the likelihood of an aviator to choose to remain on active duty at year of service 11 is 19.68 percent, provided the cost of leaving calculations provide for retirement at 20 years of service.
4. The estimated increase in the likelihood of an aviators to choose to remain on active duty at year of service 16 is 29.72 percent, provided the cost of leaving calculations provide for retirement at 20 years of service.
5. The estimated increase in the likelihood of an aviators to choose to remain on active duty at year of service 16 is 13.90 percent, provided the cost of leaving calculations provide for retirement at 25 years of service.

6. The estimated increase in the likelihood of an aviators to choose to remain on active duty at year of service 21 is 8.86 percent, provided the cost of leaving calculations provide for retirement at 25 years of service.

These results were based on a logit regression analysis of the cost of leaving factor and other demographic variables compared to an average aviators perceived likely ACCP bonus awards to retirement at 20 or 25 years of service, discounted from the year of service of retention consideration.

B. RECOMMENDATIONS

Further research should be continued by:

1. Carefully tracking not only accession to career milestone tours and pursuant bonus awards taken, but also tours and pursuant bonus awards for which an aviator is eligible but declined for resignation or other reasons. This data will eliminate the need for estimation of alternative future payscales for resignees in subsequent cost-of-leaving analysis efforts.
2. Developing a database containing observations on the post-service earnings of Naval aviators. This database will aid in contrasting Navy payscales to potential civilian earnings in future cost-of-leaving analyses.
3. Using estimated ACCP effectiveness factors in the development of a linear or non-linear program to adjust bonus rates to best meet Naval Aviation retention needs.

APPENDIX A. PILOT AND NFO SUB-COMMUNITY CUMMULATIVE CONTINUATION RATES

Naval Aviation officer 7 to 12 year Cumulative Continuation Rates (CCRs) are compared to required retention in Table A.1. Past reports calculated CCR's based on 6 to 11 year measures but due to a nominal increase of one year in time-to-train, resulting in longer service before aviators become eligible to resign, the Navy has adjusted its computations to give a more accurate picture. CCR's demonstrate the propensity of an officer in the seventh year of commissioned service to stay through the twelfth and fulfill the related department head tour. It should be noted that the apparent increase in CCR's for FY96 are artificially driven due to the 1989 changes to Title 10 which resulted in increased obligated service incurred for undergraduate flight training. Minimum Service Requirement (MSR) acquired upon winging was increased to: 6 years for NFO's, 7 years for prop and helicopter pilots, and 8 years for jet pilots. The bulk of affected aviators was therefore ineligible to submit resignations in FY 96 resulting in a misleadingly optimistic retention picture (McKenzie, 1999).

Table A.1. Cumulative Continuation Rates (CCRs) Compared to Required Retention

	FY-95		FY-96		FY-97		FY-98	
	ACT	**REQ**	**ACT**	**REQ**	**ACT**	**REQ**	**ACT**	**REQ**
PILOT	**35%**	**39%**	**52%**	**43%**	**39%**	**30%**	**32%**	**35%**
VFA	46%	83%	52%	82%	60%	44%	40%	50%
VF	39%	28%	32%	28%	31%	21%	45%	22%
VS	26%	37%	42%	41%	11%	30%	35%	30%
VP	24%	21%	35%	21%	23%	16%	19%	17%
VAQ	55%	75%	38%	94%	48%	86%	60%	35%
VAW	45%	40%	48%	40%	26%	48%	20%	43%
VQ PROP	55%	33%	23%	21%	48%	25%	19%	31%
VQ TAC	9%	23%	50%	23%	50%	19%	21%	31%
VQ JET	13%	57%	100%	41%	100%	22%	13%	22%
HS	46%	56%	55%	56%	42%	30%	52%	53%
HC	40%	33%	58%	33%	54%	29%	29%	26%
HSL	45%	41%	50%	41%	52%	34%	40%	29%
HM	25%	50%	91%	50%	49%	30%	20%	20%
NFO	**31%**	**41%**	**59%**	**40%**	**41%**	**31%**	**38%**	**38%**
VF	30%	38%	67%	33%	34%	21%	39%	22%
VS	28%	39%	74%	34%	37%	18%	46%	19%
VP	27%	25%	58%	28%	45%	18%	26%	18%
VQ PROP	35%	23%	46%	28%	32%	28%	83%	50%
VQ TAC	13%	27%	70%	23%	57%	29%	50%	44%
VQ JET	53%	45%	53%	75%	100%	20%	38%	
VAW	40%	59%	46%	28%	48%	48%	44%	26%
VAQ	32%	89%	65%	63%	41%	26%	48%	36%

Source: McKenzie – 1999

APPENDIX B. BASIC PAY, BASIC ALLOWANCE FOR HOUSING (BAH), AND AVIATION CAREER INCENTIVE PAY (ACIP)

The following pay references were used in calculating expected military pay for all aviators. Pay adjustment for inflation is automatically accounted for by the annual cost of living adjustments inherent in federal payscales. ACIP is not cost-of-living or inflation adjusted. Source is the Defense Finance and Accounting Service.

BASIC Pay – Effective January 1, 1998

Pay Grade	Under 2 Years	Over 2 Years	Over 3 Years	Over 4 Years	Over 6 Years	Over 8 Years	Over 10 Years	Over 12 Years	Over 14 Years	Over 16 Years	Over 18 Years	Over 20 Years	Over 22 Years	Over 24 Years	Over 26 Years	BAH with Deps
O – 9	6,705.60	6,881.40	7,028.10			7,206.60		7,506.60		8,133.00		8,583.60			9,197.70	1,043.70
O – 8	6,073.50	6,255.90	6,404.10			6,881.40		7,206.60		7,506.60	7,832.40	8,133.00	8,333.70			1,043.70
O – 7	5,046.60	5,389.80			5,631.60		5,958.00		6,255.90	6,881.40	7,354.80					1,043.70
O – 6	3,740.40	4,109.40	4,379.10						4,527.90	5,243.70	5,511.30	5,631.60	5,958.00	6,159.30	6,461.70	939.60
O – 5	1,991.90	3,512.70	3,755.70				3,868.80	4,077.60	4,350.90	4,676.70	4,944.30	5,094.60	5,272.50			905.70
O – 4	2,521.50	3,070.80	3,275.40		3,336.30	3,483.30	3,721.20	3,930.30	4,109.40	4,290.30	4,407.90					798.30
O – 3	2,343.30	2,619.90	2,801.10	3,099.00	3,247.50	3,363.60	3,546.00	3,721.20	3,812.40							660.60
O – 2	2,043.60	2,231.70	2,681.10	2,771.40	2,828.70											564.00
O – 1	1,774.20	1,846.50	2,231.70													504.30

Aviation Career Incentive Pay (ACIP)

Years of Service	Amount
0 – 2	$125
Over 2	$156
Over 3	$188
Over 4	$206
Over 6	$650
Over 14	$840
Over 22	$585
Over 23	$495
Over 24	$385
Over 25	$250

APPENDIX C. ACP BONUS CONTRACT ELIGIBILITY AND AWARDS

Appendix C represents the ACP contract eligibility and annual award for 1990 to 1998. Source data for contracts offered in 1990 is NAVADMIN 157/89, as repeated in Riebel (1996), and Cymrot (1989). Source data for 1991 to 1997 is McKenzie (1999). Source data for 1998 is NAVADMIN 283/97. Only the maximum possible bonus awards were used for estimations of bonuses contracts offered but not accepted. Bonus awards from contracts of lesser annual monetary value are not listed. Contracts for fiscal year (FY) 1999 and beyond are extrapolated from FY 1998 amounts.

Table C.1. ACP Eligible Communities and Contracts for FY 1990 –91

Aviation Sub-community	Maximum ACP Annual Bonus Award
VF(pilot)	$12,000
VF(NFO)	$6,000
VFA/VAL	$12,000
VAQ(pilot)	$12,000
VAQ(NFO)	$6,000
VAW(pilot)	$12,000
VAW(NFO)	$6,000
VS(pilot)	$12,000
VP(pilot)	$10,000
VQ(jet pilot)	$12,000
VQ(TACAMO/EP-3 pilot)	$10,000
VQ(TACAMO/EP-3 NFO)	$6,000
HC, HSL	$9,000
HM, HS	$6,000

Table C.2. ACP Eligible Communities and Contracts for FY 1992

Aviation Sub-community	Maximum ACP Annual Bonus Award
VF(pilot)	$12,000
VF(NFO)	$6,000
VFA/VAL	$12,000
VAQ(pilot)	$12,000
VAQ(NFO)	$6,000
VAW(pilot)	$12,000
VAW(NFO)	$6,000
VS(pilot)	$12,000
VP(pilot)	$10,000
VQ(jet pilot)	$12,000
VQ(TACAMO/EP-3 pilot)	$10,000
VQ(TACAMO/EP-3 NFO)	$6,000
HC	$9,000
HM, HS, HSL	$6,000

Table C.3. ACP Eligible Communities and Contracts for FY 1993

Aviation Sub-community	Maximum ACP Annual Bonus Award
VF(pilot)	$12,000
VFA/VAL	$12,000
VAQ(pilot)	$12,000
VAW(pilot)	$12,000
VS(pilot)	$9,000
VQ(jet pilot)	$12,000
VQ(TACAMO/EP-3 pilot)	$12,000

Table C.4. ACP Eligible Communities and Contracts for FY 1994

Aviation Sub-community	Maximum ACP Annual Bonus Award
VF(pilot)	$6,000
VFA	$12,000
VAQ(pilot)	$12,000
VS(pilot)	$12,000
VQ(jet pilot)	$12,000
VQ(TACAMO/EP-3 pilot)	$12,000
HM	$9,000

Table C.5. ACP Eligible Communities and Contracts for FY 1995

Aviation Sub-community	Maximum ACP Annual Bonus Award
VFA	$12,000
VAQ(pilot)	$12,000
VAW(pilot)	$4,000
VS(pilot)	$9,000
VQ(jet pilot)	$9,000
VQ(TACAMO/EP-3 pilot)	$12,000

Table C.6. ACP Eligible Communities and Contracts for FY 1996

Aviation Sub-community	Maximum ACP Annual Bonus Award
VF(pilot)	$12,000
VFA	$12,000
VAQ(pilot)	$12,000
VAW(pilot)	$8,000
VS(pilot)	$12,000
VQ(jet pilot)	$12,000
VQ(TACAMO/EP-3 pilot)	$12,000

Table C.7. ACP Eligible Communities and Contracts for FY 1997

Aviation Sub-community	Maximum ACP Annual Bonus Award
VF(pilot)	$12,000
VFA	$12,000
VAQ(pilot)	$12,000
VAQ(NFO)	$12,000
VS(pilot)	$12,000
VQ(TACAMO/EP-3 pilot)	$9,000
VQ(TACAMO/EP-3 NFO)	$12,000
HS	$10,000

Table C.8. ACP Eligible Communities and Contracts for FY 1998

Aviation Sub-community	Maximum ACP Annual Bonus Award
VF(pilot)	$17,000
VFA	$17,000
VAQ(pilot)	$19,000
VAQ(NFO)	$10,000
VAW(pilot)	$10,000
VS(pilot)	$19,000
VP(pilot)	$10,000

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APPENDIX D. LOGIT REGRESSION RESULTS FOR MODELS WITHOUT AIRCRAFT SUB-COMMUNITY AS AN EFFECT

The following tables represent the results of the seven main regression models without aviation sub-community as an effect. The coefficient of the logit regression equation or each effect (β_{can}) is listed along with the residual degrees of freedom, residual deviance and a value from the ^{2} test for significance. A mean value is drawn from the mean of all cases considered, with the mean cost of leaving (COL) in thousands of 1998 dollars. The effect on the dependent variable is an indication of the percentage change in the predicted odds for the dependent variable having positive indication for every 1 unit increase in the effect value. This effect is determined by the following equation:

$$\text{Effect} = 100(e^{\beta} - 1) \text{ (Hamilton, 1992)}$$

An example of the how the tables may be used follows: Aviators in the data set at 11 years of service who is assumed to consider a 20 year retirement (Table D.3) show the COL value to be significant (at the 95 percent level, or the retention prediction is at least 95 percent likely to be more accurate than without considering the COL value). The effect on the likelihood of the aviators being retained through 11 years of service increases 0.4955 percent for every thousand dollar increase in the COL. Therefore if an aviator is offered a bonus of 10,000 dollars at 16 years (including the possibility of future bonuses, providing the future bonuses are discounted to the present time frame) then his or her likelihood of retention would increase 4.955 percent.

Notations:

* significant at the 95% level

** significant at the 99% level

not significant

Table D.1. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered

Variable	Coefficient	Residual DF	Residual Deviance	Pr > ^{2}	Mean Value	Effect on Dep. Var.
Intercept	-1.867135	10557	14216.81			
COL	0.002294	10556	14214.39	0.1199045#	759.857	0.2296
Married	0.344780	10555	13883.00	0.0000000**	0.7554672	41.1679
Num. Children	0.546120	10554	13309.82	0.0000000**	0.8916028	72.6514

Table D.2. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered

Variable	Coefficient	Residual DF	Residual Deviance	Pr > ^{2}	Mean Value	Effect on Dep. Var.
Intercept	-1.276306	10556	14214.98			
COL	0.001177	10555	14214.62	0.5493674#	980.693	0.1170
Married	0.346045	10554	13885.75	0.0000000**	0.7554672	41.3467
Num. Children	0.544140	10553	13319.63	0.0000000**	0.8916028	72.3126

Table D.3. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered

Variable	Coefficient	Residual DF	Residual Deviance	Pr > ^{2}	Mean Value	Effect on Dep. Var.
Intercept	-3.207126	6327	7878.51			
COL	0.004943	6326	7874.11	0.0360328*	695.856	0.4955
Married	0.259664	6325	7725.79	0.0000000**	0.7554672	29.6494
Num. Children	0.5442566	6324	7367.23	0.0000000**	0.8916028	72.3327

Table D.4. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered

Variable	Coefficient	Residual DF	Residual Deviance	Pr > ^{2}	Mean Value	Effect on Dep. Var.
Intercept	-0.915411	6327	7878.51			
COL	0.001162	6326	7877.83	0.4121465#	827.975	0.1163
Married	0.255800	6325	7731.80	0.0000000**	0.7554672	29.1495
Num. Children	0.536155	6324	7381.80	0.0000000**	0.8916028	70.9421

Table D.5. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered

Variable	Coefficient	Residual DF	Residual Deviance	Pr > ^{2}	Mean Value	Effect on Dep. Var.
Intercept	-8.073051	6862	9118.91			
COL	0.013933	6861	9056.19	2.33146e-15**	546.937	1.4031
Married	0.455016	6860	8934.41	0.0000000**	0.794036	57.6198
Num. Children	0.353548	6859	8699.54	0.0000000**	1.099491	42.4111

Table D.6. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered

Variable	Coefficient	Residual DF	Residual Deviance	Pr > ^{2}	Mean Value	Effect on Dep. Var.
Intercept	-6.548075	6862	9118.91			
COL	0.006099	6861	9055.96	2.10942e-15**	999.167	0.6117
Married	0.454193	6860	8934.37	0.0000000**	0.794036	57.4902
Num. Children	0.353727	6859	8699.27	0.0000000**	1.099491	42.4366

Table D.7. Logit Regression Results for Navy Aviators at the 21^{st} Year of Service Assuming a Total of 25 Years of Service Considered

Variable	Coefficient	Residual DF	Residual Deviance	Pr > ^{2}	Mean Value	Effect on Dep. Var.
Intercept	-9.602886	3991	5472.80			
COL	0.019152	3990	5361.47	0.0000000**	470.396	1.9336
Married	0.301146	3989	5355.37	0.0134757*	0.794036	35.1407
Num. Children	0.015223	3988	5355.08	0.5919627#	1.099491	1.5339

APPENDIX E. LOGIT REGRESSION RESULTS FOR MODELS OF EACH AIRCRAFT SUBCOMMUNITY

The following tables represent the results of the regression models with distinguished by aviation sub-community. As in Appendix D, the coefficients of the logit regression equation or each effect variable (β_i) is listed along with the residual degrees of freedom, residual deviance and a value from the χ^2 test for significance.

The HS sub-community at 11 and 21 years of service and the VQ jet pilot sub-community are not listed. The lack of observations prevented the derivation of a sufficient model.

Negative coefficient entries are found in the tables. Some are associated with lack of significance from the χ^2 test. Also notable are entries where the effect on the dependent variable (the stay-or-leave indicator) is unreasonably large (beyond 100%). These also show lack of significance in some cases. For those sub-community models where the significance of the COL effect is less than the 95% level (marked as not significant), or the effect on the dependent variable entry (resultant from the coefficient) is not reasonably intuitive, use of the general models in Appendix D is recommended.

An example of the how the tables may be used follows: Aviators in the VFA sub-community set at 11 years of service who is assumed to consider a 20 year retirement (Table E.3) show the COL value to be significant (at the 99 percent level, or the retention prediction is at least 99 percent likely to be more accurate than without considering the COL value). The effect on the likelihood of the aviators being retained through 11 years of service increases 1.7906 percent for every thousand dollar increase in the COL.

Therefore if an aviator is offered a bonus of 10,000 dollars at 16 years (including the possibility of future bonuses, providing the future bonuses are discounted to the present time frame) then his or her likelihood of retention would increase 17.906percent.

Notations:

*	significant at the 95% level
**	significant at the 99% level
#	not significant

Table E.1. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VFA sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-6.902003	927	1246.469			
COL	0.0086282	926	1211.459	3.28029e-9**	772.873	0.8666
Married	0.5017888	925	1176.935	4.21034e-9**	0.733	65.1673
Num. Children	0.4536399	924	1146.751	3.93046e-8**	0.764	57.4031

Table E.2. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VFA sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-5.899056	927	1246.469			
COL	0.0056661	926	1222.090	7.91248e-7**	996.516	0.5682
Married	0.5071166	925	1185.781	1.68420e-9**	0.733	66.0496
Num. Children	0.4674454	924	1153.309	1.20892e-8**	0.764	59.5912

Table E.3. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VFA sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-13.07217	559	759.086			
COL	0.0177470	558	718.754	2.14000e-10**	704.360	1.7906
Married	0.4093946	557	698.951	8.58399e-6**	0.733	50.5906
Num. Children	0.6115106	556	661.408	8.94000e-10**	0.764	82.3214

Table E.4. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VFA sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-6.656531	559	759.086			
COL	0.0072666	558	744.054	0.00011**	839.292	0.7293
Married	0.4064343	557	722.637	0.00000**	0.733	50.1454
Num. Children	0.6332231	556	680.365	0.00000**	0.764	88.3672

Table E.5. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VFA sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-8.574327	582	701.984			
COL	0.0154649	581	695.120	0.00880**	549.417	1.5585
Married	0.377236	580	688.477	0.00996**	0.785	45.8248
Num. Children	0.4103682	579	666.078	0.00000**	1.033	50.7373

Table E.6. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VFA sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-6.657184	582	701.984			
COL	0.0065461	581	695.612	0.01160*	1005.402	0.6568
Married	0.3728968	580	689.020	0.01024*	0.785	45.1934
Num. Children	0.4114741	579	666.471	0.00000**	1.033	50.9041

Table E.7. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VFA sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-9.027075	391	542.601			
COL	0.0179464	390	537.204	0.02018*	473.622	1.8108
Married	0.7172932	389	535.075	0.14450#	0.785	104.8880
Num. Children	-0.0558527	388	534.711	0.54666#	1.033	-5.4322

Table E.8. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VF (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-5.824504	381	484.428			
COL	0.0076476	380	476.929	0.00617**	775.703	0.7677
Married	0.1793222	379	471.446	0.01920*	0.832	19.6406
Num. Children	0.4345205	378	456.661	0.00012**	1.120	54.4222

Table E.9. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VF (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-4.824362	381	484.428			
COL	0.0049316	380	479.405	0.02503*	999.947	.4944
Married	0.1964576	379	473.665	0.01658*	0.832	21.7084
Num. Children	0.4318988	378	459.017	0.00013**	1.120	54.0179

Table E.10. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VF (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-10.0261	255	268.965			
COL	0.0150359	254	262.262	0.00963**	706.088	1.5419
Married	0.1044499	253	259.371	0.08912#	0.832	11.0100
Num. Children	0.5078251	252	248.498	0.00098**	1.120	66.1673

Table E.11. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VF (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-5.466971	255	268.965			
COL	0.0071769	254	266.239	0.09876#	841.620	0.7203
Married	0.156048	253	262.920	0.06847#	0.832	16.8882
Num. Children	0.504968	252	252.139	0.00103**	1.120	65.6932

Table E.12. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VF (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-19.05824	338	461.634			
COL	0.0346098	337	453.146	0.00358**	549.386	3.5216
Married	-0.3010633	336	452.777	0.54371#	0.853	-25.9969
Num. Children	0.4117495	335	438.462	0.00015**	1.257	50.9456

Table E.13. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VF (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-14.35689	338	461.634			
COL	0.0142285	337	454.105	0.00607 **	1005.283	1.4330
Married	-0.289694	336	453.707	0.52843 #	0.853	-25.1507
Num. Children	0.4104722	335	439.426	0.00016 **	1.257	50.7529

Table E.14. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VF (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-3.053086	177	246.738			
COL	0.0051301	176	246.573	0.68474#	473.534	0.5143
Married	0.9251143	175	244.869	0.19171#	0.853	152.2157
Num. Children	-0.1527828	174	243.800	0.30119#	1.257	-14.1684

Table E.15. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VF (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.47199	365	442.305			
COL	0.0034082	364	440.253	0.15200#	765.512	0.3414
Married	0.434082	363	432.143	0.00440**	0.839	54.3545
Num. Children	0.4286178	362	420.112	0.00052**	1.049	53.5134

Table E.16. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VF (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-1.801651	365	442.305			
COL	0.0019552	364	441.033	0.25925#	988.179	01957
Married	0.4393491	363	432.777	0.00406**	0.839	55.1697
Num. Children	0.4289733	362	420.716	0.00051**	1.049	53.5680

Table E.17. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VF (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-1.912524	258	242.292			
COL	0.0045530	257	241.396	0.34397#	699.904	0.4563
Married	0.2965719	256	241.001	0.52996#	0.839	34.5239
Num. Children	0.0002271	255	241.001	0.99875#	1.049	0.0227

Table E.18. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VF (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-0.1180052	258	242.292			
COL	0.0016671	257	242.003	0.59087#	833.859	0.1668
Married	0.3003386	256	241.600	0.52570#	0.839	35.0316
Num. Children	-0.0006645	255	241.600	0.99654#	1.049	-0.0664

Table E.19. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VF (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-8.482764	489	562.847			
COL	0.0164631	488	556.738	0.01345*	547.802	1.6599
Married	0.0194080	487	555.665	0.30025#	0.864	1.9598
Num. Children	0.3563438	486	541.545	0.00017**	1.328	42.8098

Table E.20. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VF (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-7.054582	489	562.847			
COL	0.0075782	488	556.192	0.00988**	1001.854	0.7607
Married	0.0187698	487	555.119	0.30041#	0.864	1.8947
Num. Children	0.356438	486	540.989	0.00017**	1.328	42.8233

Table E.21. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VF (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-10.27937	340	472.723			
COL	0.0101022	339	466.026	0.00966**	471.689	1.0153
Married	-0.0060905	338	465.996	0.86241#	0.864	0.6109
Num. Children	0.0732562	337	465.396	0.43848#	1.328	7.6006

Table E.22. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VAQ (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-7.741704	196	261.778			
COL	0.0096699	195	256.372	0.02007*	774.609	0.9717
Married	0.45858	194	246.407	0.00159**	0.716	58.1826
Num. Children	0.6426322	193	233.446	0.00032**	0.812	90.1479

Table E.23. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-7.11392	196	261.778			
COL	0.0068590	195	257.948	0.05034#	997.658	0.6883
Married	0.4660065	194	247.683	0.00136**	0.716	59.3617
Num. Children	0.6566475	193	234.271	0.00025**	0.812	92.8317

Table E.24. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VAQ (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-13.51231	121	157.093			
COL	0.0186641	120	150.916	0.01295*	703.648	1.8839
Married	0.5284077	119	145.373	0.01855*	0.716	69.6229
Num. Children	0.608706	118	136.863	0.00353**	0.812	83.8051

Table E.25. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-8.616216	121	157.093			
COL	0.0098792	120	154.324	0.09615#	837.985	0.9928
Married	0.4791815	119	149.026	0.02135*	0.716	61.4752
Num. Children	0.6297193	118	139.798	0.00238**	0.812	87.7084

Table E.26. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VAQ (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-11.72971	106	148.324			
COL	0.0202251	105	147.289	0.30883#	548.553	36.1835
Married	-0.0323023	104	146.526	0.38245#	0.744	-3.1786
Num. Children	0.4170362	103	141.676	0.02765*	0.974	51.7452

Table E.27. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-9.555018	106	148.324			
COL	0.0088991	105	147.226	0.29462#	1003.722	0.8939
Married	-0.0450298	104	146.495	0.39257#	0.744	-4.4031
Num. Children	0.4186066	103	141.614	0.02715*	0.974	51.9842

Table E.28. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	1.761417	50	70.210			
COL	-0.0026440	49	70.181	0.86367#	472.805	-0.2640
Married	-0.1996551	48	69.714	0.49440#	0.744	-18.0987
Num. Children	-0.2819827	47	68.698	0.31361#	0.974	-24.5713

Table E.29. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VAQ (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-0.9654399	526	709.516			
COL	0.0010593	525	709.516	0.98038#	760.146	0.1060
Married	0.4321264	524	696.282	0.00027**	0.744	54.0530
Num. Children	0.3282562	523	685.972	0.00132**	0.805	38.8545

Table E.30. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-0.0634213	526	709.516			
COL	-0.0000925	525	709.162	0.55183#	982.427	-0.0092
Married	0.4299823	524	696.195	0.00031**	0.744	53.7230
Num. Children	0.3225286	523	686.242	0.00161**	0.805	38.0614

Table E.31. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VAQ (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-0.8046751	315	410.892			
COL	0.0013913	314	410.891	0.97182#	695.957	0.1392
Married	0.0380473	313	408.166	0.09881#	0.744	3.8780
Num. Children	0.4657414	312	394.820	0.00026**	0.805	59.3195

Table E.32. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-0.1907333	315	410.892			
COL	0.0004315	314	410.807	0.77011#	829.526	0.0432
Married	0.0365983	313	408.125	0.10150#	0.744	3.7276
Num. Children	0.463541	312	394.939	0.00028**	0.805	58.9693

Table E.33. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VAQ (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	5.63484	286	389.460			
COL	-0.0116136	285	387.365	0.14779#	547.146	-1.1546
Married	0.5744911	284	379.996	0.00664**	0.778	77.6226
Num. Children	0.3969612	283	366.871	0.00029**	0.972	48.7298

Table E.34. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	4.236484	286	389.460			
COL	-0.0049574	285	387.460	0.15739#	1000.184	-0.4945
Married	0.5768383	284	380.062	0.00653**	0.778	78.0400
Num. Children	0.3967963	283	366.952	0.00029**	0.972	48.7053

Table E.35. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VAQ (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.195668	152	196.130			
COL	-0.0001660	151	196.103	0.86916#	470.674	0.0166
Married	1.77113	150	192.134	0.04634*	0.778	487.7491
Num. Children	-0.0439098	149	192.047	0.76845#	0.972	-4.2960

Table E.36. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VAW (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.930334	442	613.855			
COL	0.0032583	441	612.727	0.28821#	763.061	0.3264
Married	0.216138	440	603.657	0.00260**	0.732	24.1274
Num. Children	0.4353507	439	587.796	0.00007**	0.795	54.5505

Table E.37. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VAW (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.319099	442	613.855			
COL	0.0019001	441	613.549	0.57973#	984.930	0.1902
Married	0.2194975	440	604.423	0.00252**	0.732	24.5451
Num. Children	0.4363859	439	588.605	0.00007**	0.795	54.7106

Table E.38. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VAW (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-9.054126	226	310.974			
COL	0.01139702	225	308.264	0.09975#	697.729	1.1462
Married	0.3118487	224	288.047	0.00001**	0.732	36.5948
Num. Children	1.287077	223	236.140	0.00000**	0.795	262.2183

Table E.39. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VAW (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-5.659133	226	310.974			
COL	0.0054886	225	310.713	0.60944#	830.887	0.5504
Married	0.3176546	224	290.387	0.00001**	0.732	37.3902
Num. Children	1.288935	223	238.463	0.00000**	0.795	262.8920

Table E.40. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VAW (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-1.189062	175	238.137			
COL	0.0011216	174	238.118	0.88970#	547.663	0.1122
Married	0.2318204	173	236.483	0.20100#	0.749	26.0893
Num. Children	0.4440768	172	226.989	0.00206**	0.929	55.9050

Table E.41. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VAW (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-1.086844	175	238.137			
COL	0.0005123	174	238.121	0.89938#	1001.507	0.0512
Married	0.230536	173	236.479	0.20003#	0.749	25.9275
Num. Children	0.4441722	172	226.989	0.00207**	0.929	55.9199

Table E.42. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VAW (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-11.90013	98	134.309			
COL	0.0123515	97	131.537	0.09588#	471.481	1.2428
Married	-1.403455	96	129.874	0.19717#	0.749	-75.4254
Num. Children	0.2618413	95	128.069	0.17913#	0.929	29.9320

Table E.43. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VAW (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	3.839414	478	636.154			
COL	-0.0050594	477	624.973	0.00083**	754.361	-0.5047
Married	0.0731298	476	618.895	0.01369*	0.779	7.5870
Num. Children	0.5501473	475	592.887	0.00000**	0.873	73.3508

Table E.44. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VAW (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	4.062592	478	636.154			
COL	-0.0041366	477	621.909	0.00016**	973.726	-0.41281
Married	0.0739234	476	616.102	0.01597*	0.779	7.6724
Num. Children	0.5400526	475	591.320	0.00000**	0.873	71.6097

Table E.45. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VAW (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	2.218198	296	348.056			
COL	-0.0029208	295	346.147	0.16710#	692.694	-0.2917
Married	0.0936761	294	339.1257	0.00805**	0.779	9.8204
Num. Children	0.8415013	293	307.5187	0.00000**	0.873	131.9847

Table E.46. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VAW (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	2.075294	296	348.056			
COL	-0.0022775	295	344.790	0.07074#	823.348	-0.2275
Married	0.0918333	294	338.037	0.00936**	0.779	9.6182
Num. Children	0.8345534	293	307.248	0.00000**	0.873	130.3785

Table E.47. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VAW (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.276893	316	429.864			
COL	0.0031381	315	429.843	0.88345#	545.413	0.3143
Married	0.4884952	314	424.231	0.01784*	0.814	62.9862
Num. Children	0.3141649	313	415.158	0.00259**	1.067	36.9115

Table E.48. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VAW (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.180099	316	429.864			
COL	0.0016204	315	429.821	0.83441#	995.964	0.1622
Married	0.4893609	314	424.188	0.01763*	0.814	63.1273
Num. Children	0.3153475	313	415.061	0.00252**	1.067	37.0736

Table E.49. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VAW (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-4.117516	167	227.512			
COL	0.0074586	166	226.497	0.31375#	468.188	0.7486
Married	0.1304046	165	226.357	0.70820#	0.814	13.9289
Num. Children	0.0887584	164	225.922	0.50988#	1.067	9.2817

Table E.50. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VS (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-8.757831	354	479.413			
COL	0.0106926	353	464.076	0.00009**	771.806	1.0750
Married	0.7678708	352	444.599	0.00001**	0.772	115.5173
Num. Children	0.4127528	351	433.457	0.00084**	0.859	51.0971

Table E.51. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VS (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-8.062533	354	479.413			
COL	0.0075881	353	466.482	0.00032**	994.376	0.7617
Married	0.7678684	352	446.618	0.00001**	0.772	115.5167
Num. Children	0.4221867	351	34.931	0.00063**	0.859	52.5293

Table E.52. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VS (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-12.82991	210	274.619			
COL	0.0176889	209	265.952	0.00324**	702.812	1.7846
Married	0.2716541	208	260.197	0.01644*	0.772	31.2133
Num. Children	0.7526539	207	237.926	0.00000**	0.859	112.2626

Table E.53. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VS (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-6.613644	210	274.619			
COL	0.0074598	209	272.455	0.14125#	836.671	0.7488
Married	0.2822575	208	266.501	0.01469*	0.772	32.6120
Num. Children	0.7441271	207	244.023	0.00000**	0.859	110.4604

Table E.54. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VS (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-1.872752	222	300.800			
COL	0.0029363	221	300.740	0.80510#	548.448	0.2941
Married	0.2526476	220	299.445	0.25523#	0.803	28.7430
Num. Children	0.2613779	219	294.970	0.03440*	1.086	29.8718

Table E.55. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VS (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-2.007002	222	300.800			
COL	0.0017376	221	300.689	0.73849#	1003.161	0.1739
Married	0.2539697	220	299.390	0.25439#	0.803	28.9133
Num. Children	0.2611844	219	294.922	0.03455*	1.086	29.8467

Table E.56. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VS (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-4.318305	127	164.734			
COL	0.0091195	126	163.968	0.38135#	472.350	0.9161
Married	0.5515063	125	163.226	0.38922#	0.803	73.5866
Num. Children	0.0735414	124	163.026	0.65449#	1.086	7.6313

Table E.57. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VS (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	1.647592	571	765.865			
COL	-0.0023104	570	761.517	0.03706*	753.065	-0.2308
Married	0.1504714	569	748.948	0.00039**	0.729	16.2382
Num. Children	0.6267923	568	715.833	0.00000**	0.776	87.1597

Table E.58. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VS (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	1.666026	571	765.865			
COL	-0.0018025	570	761.085	0.02879*	974.884	-0.1801
Married	0.1509809	569	748.549	0.00040**	0.729	16.2974
Num. Children	0.6252871	568	715.621	0.00000**	0.776	86.8782

Table E.59. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VS (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	1.775779	347	429.475			
COL	-0.0020208	346	428.234	0.26526#	692.889	-0.2019
Married	0.1780766	345	424.884	0.06720#	0.729	19.4917
Num. Children	0.325638	344	418.593	0.01213*	0.776	38.4914

Table E.60. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VS (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	0.9422657	347	429.475			
COL	-0.0006914	346	428.657	0.36573#	825.997	-0.0691
Married	0.1789336	345	425.246	0.06473#	0.729	19.5941
Num. Children	0.3302597	344	418.768	0.01092*	0.776	39.1329

Table E.61. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VS (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-3.875976	378	510.466			
COL	0.0061960	377	510.155	0.57756#	547.107	0.6215
Married	0.474756	376	502.443	0.005485**	0.773	60.7622
Num. Children	0.3511339	375	490.377	0.00051**	0.995	42.0678

Table E.62. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VS (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-3.077327	378	510.466			
COL	0.0025924	377	510.194	0.60220#	999.971	0.2596
Married	0.473108	376	502.508	0.00557**	0.773	60.4975
Num. Children	0.3508119	375	490.462	0.00052**	0.995	42.0220

Table E.63. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VS (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-7.311506	214	268.334			
COL	0.0142196	213	265.460	0.08998#	470.501	1.4321
Married	0.1009509	212	265.451	0.92855#	0.773	10.6222
Num. Children	-0.147963	211	264.293	0.28182#	0.995	83.5579

Table E.64. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VP (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-3.126365	1815	2514.655			
COL	0.0032270	1814	2512.897	0.18491#	762.537	0.3232
Married	0.1977123	1813	2477.560	0.00000**	0.776	21.8612
Num. Children	0.475467	1812	2385.760	0.00000**	0.920	60.8765

Table E.65. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VP (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-2.723004	1815	2514.655			
COL	0.0020880	1814	2514.162	0.48244#	984.453	0.2090
Married	0.1982588	1813	2478.990	0.00000**	0.776	21.9278
Num. Children	0.4769904	1812	2387.291	0.00000**	0.920	61.1218

Table E.66. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VP (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-3.964168	871	1156.787			
COL	0.0053062	870	1156.416	0.54213#	697.081	0.5320
Married	-0.0294575	869	1138.564	0.00002**	0.776	-2.9028
Num. Children	0.7261945	868	1043.394	0.00000**	0.920	106.7199

Table E.67. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VP (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-1.48895	871	1156.787			
COL	0.0014953	870	1155.953	0.36116#	830.285	0.1496
Married	-0.0325051	869	1139.077	0.00004**	0.776	-3.1982
Num. Children	0.7169052	868	1046.788	0.00000**	0.920	104.81

Table E.68. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VP (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-14.93919	869	1119.594			
COL	0.025740	868	1103.137	0.00005**	548.288	2.6074
Married	0.8648012	867	1073.247	0.00000**	0.809	137.4534
Num. Children	0.4121937	865	1036.777	0.00000**	1.117	51.0127

Table E.69. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VP (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-11.53332	869	1119.594			
COL	0.0106800	868	1104.178	0.00009**	1002.618	1.0737
Married	0.8686362	867	1074.197	0.00000**	0.809	138.3658
Num. Children	0.4102578	865	1037.992	0.00000**	1.117	50.7206

Table E.70. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VP (pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-6.07138	544	753.281			
COL	0.0134673	543	747.159	0.01335*	471.967	1.3548
Married	-0.4034891	542	746.033	0.28847#	0.809	-33.2015
Num. Children	-0.0277152	541	745.909	0.72554#	1.117	-2.7335

Table E.71. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VP (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	1.899185	1462	1930.946			
COL	-0.0028955	1461	1905.653	4.9235e-7**	741.610	-0.2891
Married	0.2774766	1460	1858.226	0.00000**	0.791	31.9795
Num. Children	0.5932475	1459	1761.196	0.00000**	1.084	80.9856

Table E.72. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VP (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	1.880729	1461	1928.967			
COL	-0.0022080	1460	1899.121	4.6778e-8**	957.019	-0.2206
Married	0.2668287	1459	1853.807	0.00000**	0.791	30.5817
Num. Children	0.5888648	1458	1758.716	0.00000**	1.084	80.1942

Table E.73. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VP (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	0.9761075	918	1065.749			
COL	-0.0010968	917	1063.036	0.09951#	684.178	-0.1096
Married	0.322941	916	1044.897	0.00002**	0.791	38.1184
Num. Children	0.4255997	915	1014.032	0.00000**	1.084	53.0508

Table E.74. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VP (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	0.5417572	918	1065.749			
COL	-0.0003908	917	1063.302	0.11775#	810.836	-0.0391
Married	0.3216593	916	1045.278	0.00002**	0.791	-3.1982
Num. Children	0.427743	915	1014.217	0.00000**	1.084	104.81

Table E.75. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VP (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-8.706284	971	1259.624			
COL	0.0155174	970	1239.939	9.1329e-6**	542.450	1.5638
Married	0.5014411	969	1223.696	5.5723e-5**	0.813	65.1099
Num. Children	0.3032765	968	1199.771	1.0015e-6**	1.242	35.4289

Table E.76. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VP (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-7.200171	971	1259.624			
COL	0.0069838	970	1239.289	6.4997e-6**	989.816	0.7007
Married	0.5042159	969	1222.932	5.2470e-5**	0.813	65.5687
Num. Children	0.3046546	968	1198.816	9.0709e-7**	1.242	35.6157

Table E.77. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VP (NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-11.62726	603	797.620			
COL	0.0229522	602	761.089	0.00000**	464.843	2.3217
Married	0.2748956	601	760.033	0.30415#	0.813	31.6393
Num. Children	0.0572573	600	759.426	0.43594#	1.242	5.8928

Table E.78. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (TACOMO/EP-3 pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-8.50908	42	59.401			
COL	0.0099232	41	59.185	0.64201#	762.884	99.7262
Married	0.6951408	40	53.855	0.02096*	0.674	100.3991
Num. Children	0.700934	37	48.899	0.02601*	1.046	101.5634

Table E.79. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-7.360895	42	59.401			
COL	0.0065246	41	59.360	0.83890#	983.131	0.6546
Married	0.6968735	40	54.035	0.02102*	0.674	100.7467
Num. Children	0.7017882	37	49.172	0.02744*	1.046	101.7357

Table E.80. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (TACOMO/EP-3 pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-24.78813	22	30.789			
COL	0.02203392	21	30.736	0.81826#	696.928	2.2278
Married	9.32254	20	21.738	0.00270**	0.674	1.1186e+6
Num. Children	0.7614908	19	18.303	0.06382#	1.046	114.1466

Table E.81. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-21.18756	22	30.789			
COL	0.0141833	21	30.786	0.95473#	828.464	1.4284
Married	9.282165	20	21.827	0.00276**	0.674	1.0744e+6
Num. Children	0.8091212	19	18.310	0.06072#	1.046	124.5933

Table E.82. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (TACOMO/EP-3 pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-12.72362	44	55.799			
COL	0.0251669	43	53.350	0.11761#	545.674	2.5486
Married	-0.229542	42	53.323	0.86854#	0.757	-20.5102
Num. Children	0.0245377	41	53.313	0.92105#	1.243	2.4841

Table E.83. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-9.538955	44	55.799			
COL	0.0105974	43	53.655	0.14319#	997.056	0.7007
Married	-0.229076	42	53.624	0.85901#	0.757	65.5687
Num. Children	0.0125961	41	53.621	0.95905#	1.243	35.6157

Table E.84. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 pilot) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-1.120951	30	42.165			
COL	0.0012376	29	42.153	0.91057#	469.019	0.1238
Married	1.103715	28	42.052	0.75094#	0.757	201.5347
Num. Children	-0.4935924	27	39.689	0.12421#	1.243	-38.9570

Table E.85. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (TACOMO/EP-3 NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	1.421426	87	105.033			
COL	-0.0017506	86	104.094	0.33271#	742.473	-0.1749
Married	0.5752833	85	100.297	0.05135#	0.750	77.7634
Num. Children	0.4040694	84	97.375	0.08734#	1.205	49.7907

Table E.86. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	1.537027	87	105.033			
COL	-0.0014774	86	103.864	0.27964#	954.344	-0.1476
Married	0.5796599	85	100.123	0.05312#	0.750	78.5424
Num. Children	0.3979095	84	97.313	0.09367#	1.205	48.8709

Table E.87. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (TACOMO/EP-3 NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	6.5372	62	39.626			
COL	-0.0081077	61	39.095	0.46632#	684.095	-0.8075
Married	0.9288322	60	35.842	0.07129#	0.750	153.1551
Num. Children	0.8540814	59	33.365	0.11550#	1.205	134.9215

Table E.88. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	6.038988	62	39.626			
COL	-0.0061989	61	38.640	0.32060#	807.255	1.4284
Married	0.9233839	60	35.553	0.07892#	0.750	1.0744e+6
Num. Children	0.8378061	59	33.202	0.12523#	1.205	124.5933

Table E.89. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (TACOMO/EP-3 NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.837055	110	146.214			
COL	0.0040491	109	145.659	0.45639#	541.241	2.5486
Married	1.758069	108	142.228	0.06400#	0.823	-20.5102
Num. Children	-0.2499916	107	140.093	0.92105#	1.388	2.4841

Table E.90. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.477363	110	146.214			
COL	0.0018565	109	145.616	0.43970#	986.313	0.1852
Married	1.756863	108	142.171	0.06343#	0.757	479.4232
Num. Children	-0.2484726	107	140.070	0.14723#	1.243	-22.0010

Table E.91. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VQ (TACOMO/EP-3 NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-17.81531	67	82.388			
COL	0.0211580	66	79.087	0.06920#	462.709	2.1383
Married	7.570017	65	77.341	0.18638#	0.757	1.9382e+5
Num. Children	-0.2577454	64	76.529	0.36750#	1.243	-22.5683

Table E.92. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (jet NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-3.853695	49	62.687			
COL	0.00676565	48	62.146	0.46204#	751.019	0.6789
Married	-0.950584	47	61.557	0.44285#	0.760	-68.3485
Num. Children	0.3107035	46	60.742	0.36660#	0.900	36.4428

Table E.93. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (jet NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.578706	49	62.687			
COL	0.0038865	48	62.384	0.58227#	971.899	0.3894
Married	-0.9076735	47	61.850	0.46495#	0.760	-59.6538
Num. Children	0.3007363	46	61.082	0.38077#	0.900	35.0853

Table E.94. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (jet NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.421288	33	37.100			
COL	0.0025283	32	36.231	0.35102#	691.916	0.2531
Married	4.183504	31	25.347	0.00097#	0.760	6.4895e+4
Num. Children	-0.6656856	30	24.442	0.34127#	0.900	-48.6079

Table E.95. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (jet NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.860375	33	37.100			
COL	0.0026780	32	36.074	0.31088#	824.084	0.2682
Married	4.165625	31	25.323	0.00104#	0.760	6.34336+4
Num. Children	-0.6698715	30	24.400	0.33682#	0.900	-48.8226

Table E.96. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - VQ (jet NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-4.417991	52	64.920			
COL	0.0089717	51	64.782	0.70978#	542.280	0.9012
Married	-0.3126074	50	64.558	0.63658#	0.823	-26.8546
Num. Children	0.6291969	49	61.017	0.05986#	1.025	87.6103

Table E.97. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - VQ (jet NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-3.113417	52	64.920			
COL	0.0036028	51	64.810	0.74030#	988.719	0.3609
Married	-0.3108888	50	64.588	0.63749#	0.823	-26.7205
Num. Children	0.6248458	49	61.084	0.06120#	1.025	86.7958

Table E.98. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - VQ (jet NFO) sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-19.97451	29	32.596			
COL	0.0260322	28	30.978	0.20339#	464.075	2.6374
Married	6.144315	27	30.136	0.35880#	0.823	4.6506e+4
Num. Children	0.4392051	26	29.350	0.37517#	1.025	55.1473

Table E.99. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - HS sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	5.137225	26	22.652			
COL	-0.0047688	25	22.543	0.74090#	765.396	-0.4757
Married	1.167732	24	22.468	0.78471#	0.815	221.4693
Num. Children	-0.5019468	23	21.520	0.33014#	1.111	-39.4649

Table E.100. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - HS sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	6.651847	26	22.652			
COL	-0.0051724	25	22.457	0.65908#	988.939	-0.5159
Married	1.136403	24	22.399	0.80816#	0.815	211.554
Num. Children	-0.5113916	23	21.429	0.32470#	1.111	-40.0340

Table E.101. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - HS sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	28.06849	26	37.096			
COL	-0.0672297	25	33.137	0.04661*	547.749	-0.6700
Married	8.104064	24	29.312	0.05050 #	0.857	3.3069e+5
Num. Children	0.5604158	23	27.582	0.18839#	1.200	75.1401

Table E.102. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - HS sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	23.02001	26	37.096			
COL	-0.0316600	25	32.592	0.03381*	1001.524	-3.1164
Married	8.060014	24	28.920	0.05532#	0.857	3.1643e+5
Num. Children	0.5566953	23	27.246	0.19577#	1.200	74.4893

Table E.103. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - HSL sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.750495	2051	2669.049			
COL	0.0033116	2050	2665.611	0.06371#	759.764	0.3317
Married	0.4880065	2049	2552.490	0.00000**	0.723	62.9065
Num. Children	0.7296742	2048	2390.016	0.00000**	0.843	107.440

Table E.104. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - HSL sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-2.12251	2051	2669.049			
COL	0.0019222	2050	2668.309	0.38981#	980.765	0.1924
Married	0.4905624	2049	2554.938	0.00000**	0.723	63.3234
Num. Children	0.7291309	2048	2393.090	0.00000**	0.843	107.3277

Table E.105. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - HSL sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-3.7535	1323	1598.136			
COL	0.0056329	1322	1593.837	0.038135*	695.975	0.5649
Married	0.3435818	1321	1562.890	0.00000**	0.723	40.9989
Num. Children	0.4709684	1320	1508.150	0.00000**	0.843	60.1544

Table E.106. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - HSL sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-1.849704	1323	1598.136			
COL	0.0024364	1322	1597.253	0.34754#	828.265	0.2440
Married	0.3468599	1321	1566.194	0.00000**	0.723	41.4619
Num. Children	0.4685044	1320	1512.164	0.00000**	0.843	59.7603

Table E.107. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - HSL sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-11.79417	1404	1931.484			
COL	0.0200731	1403	1909.386	2.5911e-6**	547.115	2.0276
Married	0.4784207	1402	1878.490	2.7221e-8**	0.773	61.3524
Num. Children	0.3887121	1401	1819.073	0.00000**	1.069	47.5080

Table E.108. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - HSL sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-9.575594	1404	1931.484			
COL	0.0087644	1403	1909.314	2.4960e-6**	1000.072	0.8803
Married	0.4782405	1402	1878.455	2.7748e-8**	0.773	61.3233
Num. Children	0.388394	1401	1819.105	0.00000**	1.069	47.4612

Table E.109. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - HSL sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-13.17508	718	990.114			
COL	0.0264177	717	962.750	0.00000**	470.593	1.6553
Married	0.4862851	716	960.404	0.12560#	0.773	57.8200
Num. Children	0.0021174	715	960.403	0.97504#	1.069	0.2120

Table E.110. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - HC sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-4.855268	599	811.495			
COL	0.0061957	558	806.035	0.01945*	761.248	0.6215
Married	0.1273958	557	792.080	0.00019**	0.703	2.7775
Num. Children	0.7206555	556	742.310	0.00000**	0.702	105.5779

Table E.111. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - HC sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-4.138146	599	811.495			
COL	0.0040623	558	808.210	0.06989#	983.068	0.4071
Married	0.1285784	557	794.123	0.00018**	0.703	13.7211
Num. Children	0.7262222	556	743.807	0.00000**	0.702	106.7256

Table E.112. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - HC sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-3.986403	354	455.532			
COL	0.0060629	353	454.174	0.24394#	696.931	0.6081
Married	0.1142525	352	450.442	0.05336#	0.703	12.1035
Num. Children	0.3677069	351	440.174	0.00135*	0.702	44.4419

Table E.113. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - HC sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-1.569257	354	455.532			
COL	0.0021986	353	455.408	0.72421#	830.040	0.2201
Married	0.1038456	352	451.899	0.06104#	0.703	10.9429
Num. Children	0.3660103	351	441.745	0.00144**	0.702	44.1970

Table E.114. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - HC sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-17.4599	366	492.494			
COL	0.0303270	365	481.995	0.00119**	547.806	3.0792
Married	0.7966405	364	461.860	0.00001**	0.773	121.8077
Num. Children	0.4136355	363	444.973	0.00004**	1.069	1.5123

Table E.115. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - HC sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-14.00375	366	492.494			
COL	0.0131413	365	481.366	0.000850**	1001.723	1.3228
Married	0.7924203	364	461.338	0.000008**	0.773	120.8736
Num. Children	0.4133861	363	444.490	0.000041**	1.069	51.1929

Table E.116. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - HC sub-community

Variable	Coefficient	Residual DF	Residual Deviance	$Pr > \chi^2$	Mean Value	Effect on Dep. Var.
Intercept	-10.91618	205	278.527			
COL	0.0208034	204	274.660	0.04924*	471.554	2.1021
Married	0.6485375	203	272.846	0.17812#	0.773	91.2741
Num. Children	0.0374113	202	272.745	0.74977#	1.069	3.8120

Table E.117. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 20 Years of Service Considered - HM sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-0.3113399	155	190.927			
COL	0.0005603	154	190.755	0.67836#	752.464	0.0561
Married	0.4395672	153	184.886	0.01541*	0.731	55.2035
Num. Children	0.6024015	152	176.780	0.00441**	0.872	82.6500

Table E.118. Logit Regression Results for Navy Aviators at the 9th Year of Service Assuming a Total of 25 Years of Service Considered - HM sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	0.410086	155	190.927			
COL	-0.0003025	154	190.420	0.47618#	970.082	-0.0302
Married	0.4385429	153	184.638	0.01619*	0.731	55.0446
Num. Children	0.5973955	152	176.788	0.00508**	0.872	81.7379

Table E.119. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 20 Years of Service Considered - HM sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	6.642326	108	130.160			
COL	-0.0092165	107	127.966	0.13854#	691.930	-0.9174
Married	0.3320656	106	125.456	0.11312#	0.731	39.3844
Num. Children	0.4747718	105	121.514	0.04709*	0.872	60.7647

Table E.120. Logit Regression Results for Navy Aviators at the 11th Year of Service Assuming a Total of 25 Years of Service Considered - HM sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	6.220073	108	130.160			
COL	-0.0072370	107	126.780	0.06599#	820.836	-0.7211
Married	0.3377743	106	124.370	0.12056#	0.731	40.1824
Num. Children	0.4657501	105	120.671	0.05443#	0.872	59.3209

Table E.121. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 20 Years of Service Considered - HM sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-9.432335	93	128.219			
COL	0.0157877	92	126.764	0.2277#	544.201	1.5913
Married	0.158428	91	126.006	0.38397#	0.766	17.1668
Num. Children	0.2963812	90	123.630	0.12323#	0.989	34.4982

Table E.122. Logit Regression Results for Navy Aviators at the 16th Year of Service Assuming a Total of 25 Years of Service Considered - HM sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-7.259717	93	128.219			
COL	0.0064695	92	126.823	0.23742#	993.443	0.6490
Married	0.1584317	91	126.084	0.39009#	0.766	17.1672
Num. Children	0.2906364	90	123.785	0.12943#	0.989	33.7278

Table E.123. Logit Regression Results for Navy Aviators at the 21st Year of Service Assuming a Total of 25 Years of Service Considered - HM sub-community

Variable	Coefficient	Residual DF	Residual Deviance	Pr > χ^2	Mean Value	Effect on Dep. Var.
Intercept	-33.96784	36	45.033			
COL	0.053635	35	40.574	0.03471*	466.879	5.5099
Married	6.657253	34	39.232	0.24669*	0.766	7.7741e+4
Num. Children	0.5640656	33	35.997	0.07210#	0.989	75.7805

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